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15 July 1983

## USSR REPORT TRANSPORTATION

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## CIVIL AVIATION

### OFFICIAL URGES CONTINUED FUEL CONSERVATION EFFORTS

Moscow VOZDUSHNYY TRANSPORT in Russian 15 Mar 83 p 3

/Article by B. Likhachev, first deputy general director and chairman of the fuel and energy committee of the Central Administration for International Air Services, Sheremetevo: "The Goal Is Economy, the Approach Is Comprehensive"

/Text "At present, economy and a careful attitude toward the people's property are a question of the reality of our plans. And it is essential to resolve this question by providing for an entire system of practical measures..." emphasized Comrade Yu.V. Andropov, general secretary of the CPSU Central Committee, at the November (1982) plenum of the CPSU Central Committee.

The directives of the MGA (Ministry of Civil Aviation) on increasing the effectiveness of measures to save aviation fuel have found reflection in the comprehensive, goal-oriented program of Aeroflot's Central Administration for International Air Services, which contains a system of organizational, methodological, technical, technological and other practical measures for saving fuel on every flight. The implementation of the program is being directed by the general director of the administration, N. Poluyanchik, with no intermediary. Mobilization of the collective to develop creative initiatives and to increase the activity level of aviation employees has been carried out by management, party and public organizations. The widespread introduction of computer equipment and new technologies, and improvements in moral and material incentives are also included in this far from complete list of the measures which have made it possible for the administration to save 12,200 tons of aviation fuel in 1981. And in 1982 22,600 tons were saved; this is equivalent to the completion of more than 750 roundtrip flights from Moscow to Berlin.

What has made it possible to achieve such results? First of all, the broad participation in the work by all subdivisions of the administration. For example, at air technical bases trial flights by certain types of aircraft after the replacement of one engine have been eliminated, instruction in starting and testing engines takes place on a simulator; a great deal of attention is given to the cleanliness of the aircraft's surface and to the

condition of its coat of paint and varnish, as well as to avoiding the use of an auxiliary power installation when starting the engines and heating aircraft cabins, and to towing aircraft whenever possible instead of having them taxi in on their own engines; the Fuel and Lubricant Service provides for the collection and secondary utilization of fuel residues and aviation subdivisions have made a significant reduction in the number of service-auxiliary and non-production flying time accumulated by aircraft.

In order to ensure coordination and supervision of the work on saving aviation fuel, a central committee was established within the administration; the committee brings together seven working groups on the basic directions of this work. They include the economic, technical, flight and commercial groups, the groups on automatic control systems and computer equipment, ground services and the exchange of the most advanced experience. The activities of the committee and the working groups are structured on the basis of a single plan and they are aimed at the achievement of a final result. In the last two years the greatest contribution to aviation fuel conservation has been made by projects related to the introduction of computer equipment.

The computer economizes

A series of effective projects on aviation fuel conservation has been carried out by the administration's group information and computational center, directed by K. Ivanov. An automated system of navigational calculations, which was developed and introduced jointly with the traffic service and the LShO [not further identified], provides information on the navigational parameters of flight and the choice of flight levels which are economically beneficial in terms of fuel consumption for every flight leaving Sheremetevo International Airport. The contribution of the group information and computational center to the total savings in 1982 amounted to 5,100 tons of aviation fuel.

The computer also chooses the parking places for aircraft taxiing in at Sheremetevo Airport: it calculates the economically most beneficial place for every flight and it puts this information on the display screen of the controller in charge of taxiing aircraft. Because this system reduces taxiing time for heavy aircraft, it saves over 1,000 tons of aviation fuel per year. The technology developed for the optimal selection of parking places for aircraft can be used at airports which do not have computers.

The administration's technical department, led by V. Brusilovskiy, is active in the development and introduction of automated systems and progressive technologies. The department has introduced a subject plan and a system of monitoring indicators on efficiency improvement, and it has organized appropriate inspections, competitions and exhibits for the exchange of information; with all these activities it has mobilized the creative efforts of the administration's efficiency experts and inventors in the direction of economy in the use of fuel and energy resources.

## The contribution of the efficiency experts

"In order to save aviation fuel in accordance with efficiency proposal No 3128 I propose to introduce a new technology for the separate testing of all types of aircraft," begins the directive by A. Pashchenko, the chief of the Sheremetevo Air Technical Base: it was issued after the adoption by the technical council of the proposal by the efficiency experts M. Kamayev and V. Yevdokimov. This efficiency recommendation will save 140 tons of aviation fuel every year. In addition, the administration's efficiency experts have produced a new instrument to measure precisely the thickness of the residue layer on the runway; the introduction of this instrument has reduced the number of cases in which incoming aircraft are directed to the auxiliary airport, and it has resulted in savings of 74 tons of fuel per year.

These and many other suggestions occupy an important place in the subject plan of the administration's efficiency experts and inventors, and their total contribution to the savings of aviation fuel amounted to 13,000 tons in 1982 alone. In the comprehensive, goal-oriented economy program a particular role is given to questions of how to optimize traffic control within the airport area.

## What depends on aircraft runway control

At one of the sessions of the fuel committee, V. Rusol, a senior navigator at Sheremetevo International Airport and a candidate of technical sciences, suggested that during periods when the tail and lateral components of the wind speed in the region of the airport do not exceed five meters per second, and if there are no other limitations, the most economically advantageous direction of runway operation should be chosen depending on the relationship between the flow intensities for aircraft taking off and arriving. Under his leadership the appropriate technology was worked out, and its introduction provided a savings of more than 1,000 tons of fuel per year. On the basis of the Sheremetevo experiment the Central Administration of International Air Services and in Leningrad the UGA (Civil Aviation Administration) have developed and introduced a method for choosing the best direction of runway operation at Pulkovo Airport, using the "Start" automated system of air traffic control, as well as a special aerial survey to guide pilots. After the successful introduction of these projects at the Sheremetevo and Pulkovo airports, specialists from the MGA, the Central Administration for International Air Services, MTU (Technical Installation Administration) and the State Scientific Research Institute of Civil Aviation worked out the methods for choosing the optimal direction of runway operation for all the airports in the Moscow airport network. This has saved more than 8,000 tons of fuel per year. The minister of civil aviation issued instructions recommending that these methods should be applied at all of the industry's airports. It should be emphasized that the implementation of these methods with regard to local airport conditions requires almost no material expenditures, and its introduction at only 50 first-category airports will make it possible to save more than 200,000 tons of aviation fuel per year.

The Central Administration for International Air Services (CAIAS) has also developed and introduced optimal schemes for aircraft traffic during training flights, and this makes it possible for one sixth of the administrations crews to train on fuel which has been saved, and Sheremetevo International Airport's utilization of optimal schemes for landing passes by aircraft saves another 700,000 tons of fuel annually.

Without listing all of the forms and methods for saving aviation fuel, it should be noted that their end result is determined to an enormous degree by the contribution of the flight crew.

The thrifty compete

The administration has promoted widespread socialist competition among flight crews on the basis of individual records for efficiency and savings. The following practical methods for saving fuel on every flight have been included in the instruction programs for crews: maintaining optimal flight operations depending on the aircraft's flight weight; flying the Il-62 and the Tu-154 with optimal rear centering, ensuring that the flaps are deflected to the minimum angle during takeoff of the Tu-154 aircraft, starting the engines when being towed and warming them up during taxiing, taxiing after landing with one or two of the engines shut down and making maximum possible use of the optimal calculations by the computer, etc. After every flight an analysis is made of the consumption and saving of fuel during the flight, and the experience and skill of the best crews is generalized and disseminated among the entire flight staff. Here are the results of efforts to save aviation fuel by the best crews in 1982: Il-86 Captain Yu. Ovsyannikov--42 tons, Il-86 Captain N. Samsonov--50 tons, Il-76 Captain Ye. Zlatoverkhovnikov--311 tons.

In addition to saving aviation fuel, CAIAS subdivisions participated in the public review of effectiveness utilization for raw and other materials and of fuel and energy resources: in 1982 the subdivisions saved 2.6 million kilowatt hours of electrical energy, 4 million cubic meters of natural gas, 100 tons of gasoline and diesel fuel, 29,100 gigacalories of thermal energy.

The further expansion of this work is called for by the comprehensive, special-purpose program, and it is the guarantee that the increased socialist obligations accepted by the administration's collective in the conservation of material and fuel-energy resources for 1983 will be fulfilled.

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## CIVIL AVIATION

### MINISTRY OFFICIAL ON FUEL SUPPLY, CONSERVATION EFFORTS

Moscow GRAZHDANSKAYA AVIATSIYA in Russian No 5, May 83 pp 18-19

[Article by I. Shishkov, chief of the administration of fuel and lubricants of the Ministry of Civil Aviation: "The Reserves of Our Service"]

[Text] Civil aviation is the largest consumer of aircraft fuel, in particular, kerosene. Suffice it to say that several hundred railroad tankers full of it arrive at the fuel and lubricant warehouses each day.

The supplies of aircraft fuel allotted to Aeroflot basically make it possible to satisfy the needs of the national economy and the population for air transportation and completely fulfill the national economic plan. Evidence of this is the early fulfillment of state assignments of the second year of the 11th Five-Year Plan. The largest contribution to the overall cause was made by workers of fuel and lubricant services of the Central Administration of the Ministry of the Armed Forces, and the Azerbaijan, Ukrainian, Latvian and Estonian administrations. Because of these services there were no delays in trips. There were also no violations of limit discipline and the established limits of aircraft fuel were observed.

But one cannot say that the success was achieved easily. As before, serious difficulties arise with the deliveries of aircraft fuels. The main problem is that the fuel is not consumed uniformly throughout the year. This is brought about by the varying intensiveness of aircraft shipments during the fall-winter and spring-summer periods.

The situation is complicated even more by the fact that the regions of the Far North have to ship in practically all of their annual supply of fuel during the period when the rivers are navigable, but the petroleum processing industry delivers its products uniformly throughout all the quarters. The only solution to the problem is the creation of an adequate local stock of reservoirs to store supplies of fuel and lubricants in the first and second quarters and the utilize them during the periods of increased consumption.

A good deal of attention is being devoted to the construction of a stock of reservoirs under the 11th Five-Year Plan. In aviation enterprises of the Turkmen, Leningrad, Tyumen, Armenian and other administrations, because of this it has been possible to achieve continuous supply of fuel for all of the trips even during the "peak" periods of shipments. At the same time a number of airports

of the Volga, Northern Caucasus and Uzbek administrations and the UGATs are operating, as it were, "on reserve." And this is a poor guarantee of regularity of the flights.

Moreover, the position of certain managers of aviation enterprises regarding this causes justifiable uneasiness. Some people still think that the development of a reserve stock is not their business. They see their function only in preparing telegrams with request for first aid, which cannot always be rendered immediately because of a number of factors which depend on industry and rail transportation. But in one way or another it is necessary to give assistance: for one cannot allow an interruption in shipments and detriment to the interests of the air passengers. But what a cost!

A relatively recent example: because of the lack of reserve capacities at aviation enterprises of the Northern Caucasus, in the first four months of last year it was necessary to ship fuel from Grozny to Aktyubinsk, Uralsk, Mangyshlak and other airports of Western Kazakhstan. And a fairly large amount of it. Then in June, with the introduction of the summer schedule, it was necessary to essentially augment the supplies of the Caucasus enterprises with reserves from Tula, Bryansk and Kaluga. So much public money thrown to the wind (hundreds of thousands of ton-kilometers of useless shipments) and so much extra work for railroad transportation!

And this is not all. The lack of necessary capacities, like the inadequate supply of rail warehouses (small productivity of means of pumping and receiving platforms) lead to above-normative idle time of railroad tank cars during unloading. And, consequently, to delays in sending fuel from the petroleum processing plants. Moreover, Aeroflot must pay monetary fines for this idle time.

For the sake of fairness it should be noted that during the first two years of the 11th Five-Year Plan the fines were considerably reduced. But this does not give us cause for complacency. It is necessary to consistently reduce them to the minimum level. This is a completely realistic requirement, which can be met through both technical improvements (constructing rail side warehouses and platforms, increasing the capacities of the pumping facilities, extensively introducing means for siphoning) and organizational measures--using ring routes with return of tankers (so-called "revolving routes"), which considerably increase the turnover between plants and airports.

Here we always try to support the Ministry of Railways. There are many examples of excellent organization of service of rolling stock by this method. Aircraft workers of the Leningrad administration and a number of enterprises of the Western Siberian administration handle the shipment of fuel well. It would seem that there would be no special difficulty for workers of the Northern Caucasian administration, although the ring routes here have been organized relatively recently and then under great pressure from the Ministry of Railways and the Ministry of Civil Aviation.

One should emphasize one more detail which is of no small importance: the need for complete discharging of fuel from the tankers. In certain cases residual fuel greatly exceeds the established norms, which in addition to losses also leads to considerable additional expenditures on the tankers because of the need to clean them.



One of the most important tasks of the branch under the 11th Five-Year Plan is further technical re-equipment of the fuel and lubricant warehouses: the construction of new reservoirs and the replacement of small horizontal containers with vertical ones with capacities of up to 5,000 cubic meters, increasing the capacities of pumping equipment, and developing pipeline transportation.

I should like to deal with the last point in greater detail. The utilization of pipelines instead of rail and automotive transportation has long been recognized as the most promising direction because of the great efficiency and economy of this. Thus there is not only no longer a need for individual means of transportation (which in itself will save on material and labor resources), but there will also be an essential increase in the speed of transportation, losses of fuel because of natural causes will also be reduced, and the quality will be better preserved. The advantages of this method from the standpoint of minimal pollution of the environment and reduced danger of fire are also obvious.

Civil aviation is using both large mainlines, in which fuel is delivered directly to the airports from the oil refineries, and local lines--between fuel and lubricant warehouses and from warehouses to the places for fueling airplanes and helicopters. One must keep in mind that expenditures on the transportation of fuel by motor vehicles are twice as great as for delivery through pipes. So the advantages of pipelines are obvious and we must more actively develop this method of transporting aviation fuel and lubricants.

In a number of large airports such as the Domodedovo, Borispol, Sochi, Sheremetyevo, Tolmachevo, Tashkent and Khabarovsk they have highly productive automated lines for centralized fueling. As distinct from other fueling points, they provide for high efficiency and economy of the fuel supply facilities. The development and introduction of such systems and means of mechanization and automation constitute the main direction in technical re-equipping of fuel and lubricant services.

The issue of issues in the activity of the enterprises is economizing on fuel. As of today practically all technological processes in civil aviation that involve the expenditure of petroleum products have scientifically substantiated normatives--beginning with technical servicing of aircraft on land and ending with one stage of flight or another. As practice shows, it is quite realistic to meet these normatives. Moreover, with an economical approach to the matter and creative search for reserves it is possible to reduce the expenditure of fuel as compared to the normative. For example, the proportional expenditure of aircraft kerosene per unit of transportation work has been reduced in the aircraft enterprises of the Kazakh, Komi and Georgian administrations. But one still frequently encounters cases of violation of the normatives. In particular, the unproductive operation of engines on land has not been regulated everywhere. The established normative of their earnings with respect to productive flying time is frequently exceeded and, after all, every percentage point of reduction of operation of engines on land in Aeroflot means to save several thousand tons of aircraft fuel! The failure to observe norms, as a rule, leads to violations of limit discipline. There are serious violations of this on a regular basis in the Far Eastern, Western Siberian, Eastern Siberian and Krasnoyarsk administrations, although the expenditure of aircraft fuel within the established limits is one of the important indicators of the efficiency of the operation of the aviation enterprise and the level of productivity of the flights.

Economizing on fuel is inseparably related to the precision of measurements during all technological operations. Measurements are made at the time of the receipt and storage of fuel--according to graduated measurement tables for each individual reservoir, when it is issued from the fuel and lubricant warehouse, and when aircraft are being fueled--according to indications of calculators that are installed at the distribution points, fueling points and systems for centralized fueling. The precision of these instruments averages plus or minus a half percent, which amounts to up to 5 liters for every thousand liters. If one takes into account that the daily expenditure of fuel by an airport reaches thousands of tons, one can imagine the losses that are sustained with an amount of error that looks insignificant at first glance. And what if the meter is adjusted either higher or lower for indicating expenditure in excess of the established amount? Therefore one must unwaveringly meet the requirement of the USSR Gosstandart concerning periodic checking of the measurement instruments. Unfortunately, we have not fully solved this problem. Work for creating devices for checking the meters that was done by civil aviation plant No 85 is behind schedule, and the technical specifications have not been coordinated between the plant and the USSR Gosstandart. A number of enterprises use improvised devices, but they are imperfect and do not meet the requirements of the GOST. Apparently there is a need to create repair and metrological bases that are staffed with highly qualified specialists who handle the measurement instruments for accounting for fuel and lubricants.

An essential aspect of the activity of aviation enterprises is economical expenditure of automotive and tractor fuel. Ground equipment and electric power stations of airports annually consume hundreds of thousands of tons of gasoline and diesel fuel. But it is not consumed efficiently everywhere. Thus there are still frequent cases of the utilization of poorly adjusted engines with increased expenditure of fuel. More than half of the diesel fuel goes for creating heat and electric power. Here is an immense reserve for economizing: thrifty expenditure of fuel and electric power means a direct savings on fuel.

In many aviation enterprises the expenditure of automotive and tractor fuel is strictly accounted for and inefficient utilization of it is not allowed. But from year to year there are overexpenditures of gas and diesel fuel (and in large quantities) by enterprises of the Krasnoyarsk, Tyumen, Yakutsk and Volga administrations.

One of the most important measures in the matter of economizing on fuel resources is comprehensive reduction of operational losses--from leakage, spillage, incomplete removal, contamination (with water and tar), mixing and so forth. In other words, because of omissions of technical personnel--tardy or poor quality preventive service and repair of equipment, the failure to observe rules for the utilization and storage of fuel, and also inattention and negligence. These omissions are the direct result of violations of labor and technological discipline. Operational losses, as distinct from natural losses, can and should be fully eliminated. It is quite inadmissible to treat them as trivia that are not worthy of attention.

Deterioration of the quality of the fuel leads to significant losses. The conditions for this are created when it is repeatedly poured out of one container and into another, and when it is transported and stored for long periods of time.



Therefore, in addition to permanent improvement and observance of the rules of operation of equipment it is extremely necessary to carefully and promptly check on the condition of the fuel. Preventive measures for maintaining high quality are less expensive and labor-intensive than measures for restoring quality. In addition to economic considerations there is another very important aspect here. High-quality fuel is a mandatory condition for the safety of the flights.

In order to control the quality of the fuel each enterprise has created base laboratories. They perform functions of controlling the work of the laboratories in the fuel and lubricant services and are concerned about raising the professional level of the laboratory workers. But these base laboratories have not become true methodological centers everywhere.

There are complaints about the work of laboratories locally as well. Some of them have an inadequate metrological base and the quality of fuel and lubricants is not always analyzed on a high level. Frequently the intake control is poorly organized, as a result of which there are cases of receiving poor-quality fuel. Technological charts of the preparation of fuel for use are not kept everywhere. Shortcomings in this matter are especially appreciable since they can lead to fueling aircraft with poor-quality fuel.

Recently the fuel and lubricant services have been supplied with more of the latest equipment and fittings. Each year aviation enterprises receive hundreds of various pumps for pumping fuel, dosers and meter-doser devices, batches of equipment for siphoning, and collecting pipelines. Many kinds of this equipment is nonstandard and manufactured by civil aviation plants. But for a number of items (filters, hydrant regulators, hydraulic shock absorbers and other things) the needs of the fuel and lubricant services are still not being fully satisfied, which impedes the technical development of the facilities and further expansion of the utilization of centralized fueling systems.

Inventors and efficiency experts are making a significant contribution to improving the technical level of the services. Each year they introduce an average of about 200 proposals that save a fairly large quantity of fuel. The economic effect from this reaches 250,000-300,000 rubles a year. Innovators are especially active in the Ukrainian, Kazakh, Magadan and Moscow transportation administrations and the TsUMVS. Very interesting and useful innovations have been introduced in Bratsk (an installation for automatically turning off the pump during pumping), Kharkov (packing the shaft of the pump which prevents leakage), Simferopol (a method of remote determination of leaking places in pipelines), Magadan (a device for filtering oils) and many others.

Gathering and utilizing used petroleum products constitute no small reserve for economizing. Aviation enterprises periodically conduct planned cleaning of warehouse reservoirs and capacities of fuel stations, pour out the residual fuel from the tanks of aircraft and fuel distribution points, and gather aircraft kerosene, gasoline and oils that have been used for servicing. These resources are fairly significant: in the country as a whole each year they amount to thousands of tons. And a considerable proportion of them, after sedimentation, filtration and compulsory laboratory analysis can be used again for their direct purpose. But to do this it is necessary to avoid mixing aircraft

fuel with other wastes, that is, to be careful and take an economic attitude toward gathering the residual fuels. The rest of the petroleum products that are gathered are not thrown away either: they go for processing (regeneration) in established groups or, with the permission of the petroleum sales organizations, they are used for boiler fuel.

The success of all of our activity is determined by people. The elimination of the aforementioned shortcomings depends mainly on their occupational training and strict observance of their duties, their initiative and discipline, and an economical approach to solving production problems. Therefore the work that is being done to educate personnel and raise the level of their knowledge and special training is of immense significance. A large role is played by socialist competition which has extensively developed the struggle for earning the titles "Best In The Profession" and "Exemplary Collective."

It is the duty of every worker of the fuel and lubricant service to take all measures for continuous supply of aviation enterprises with the necessary fuel resources, successful fulfillment of planned assignments and socialist commitments, and ensurance of safety and regularity of the flights. A reliable path to solving this problem is a thrifty attitude toward each gram of fuel and unwavering observance of technological and labor discipline.

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## CIVIL AVIATION

### MINISTRY COLLEGIUM REVIEWS SUCCESSES, SHORTCOMINGS

Moscow VOZDUSHNYY TRANSPORT in Russian 29 Mar 83 p 1

/Unsigned Article: "In the Collegium of the Civil Aviation Ministry"

/Text/ A session of the Civil Aviation Ministry (MGA) Collegium was held under the chairmanship of B.P. Bugayev, the minister of civil aviation. On the basis of results from an inspection by the USSR People's Control Committee, consideration was given to the question of ensuring the safekeeping of socialist property in the civil aviation administrations.

Socialist property is the economic basis of our state; it is sacred and inviolable. Many aviation enterprises follow strict procedures in accounting for and protecting material valuables, including freight, baggage and mail accepted for shipment.

At the collegium it was noted that the shipping of freight by air transport is playing an ever increasing role in the economy of our country. Every year more than 1.2 million tons of express freight is delivered to meet the needs of geologists and petroleum specialists, builders and power engineers, fishermen and reindeer farmers. The aviators are also making a labor contribution to the implementation of the Food Program. In a year airplanes and helicopters transport about 400,000 tons of food, sowing materials, biologicals and other agricultural freight. In 1982 alone aviation delivered more than 40,000 tons of fresh fruits and vegetables to remote regions of the Far North, Siberia and the Far East.

Recently there has been a strengthening of the material base of the freight services; they now have available more means of mechanization for loading and unloading work. In the 10th Five-Year Plan nearly 9 million rubles were spent on the construction of new freight warehouses and the expansion of existing ones. This work is continuing in the current five-year plan as well.

At the same time, as the USSR People's Control Committee noted, the level of organization in the shipping of freight and the state of security for material valuables being transported by air still do not meet the requirements of the party and the government. Situations in which there is a lack of control and responsibility have developed in certain administrations;

some commanding officers of aviation enterprises have avoided the management of freight services, and they have been lax in taking measures to eliminate the reasons which contribute to the theft and loss of material valuables. In the past year more than 4,300 claims of unsatisfactory safekeeping of freight and mail during shipping have been filed by freight clientele and organs of communications which use the services of civil aviation enterprises.

Serious concern is aroused by the fact that at a number of aviations enterprises there has been little work to analyze the reasons for the claims and to determine the specific culprits. Moreover, significant sums to meet the claims by the freight clientele are applied to the enterprises' losses. For example, the Kazakh Administration recovered 1,500 rubles for the freight losses from specific culprits, but it wrote off 5,200 rubles as losses. In the Arkhangelsk Administration the guilty parties put into the till only 400 rubles, while the state suffered losses amounting to 11,300 rubles. Unfortunately, these instances are not unique. The Krasnoyarsk Administration wrote off 50,700 rubles in losses, the Ukrainian Administration wrote off 21,000 rubles, the Volga Area Administration wrote off 9,000 rubles, UGATs [expansion unknown] wrote off 8,000 rubles, and the Northern Caucasus Administration wrote off 6,000 rubles. In a number of cases this practice gives rise to a feeling of impunity and does not contribute to the discovery and elimination of inadequacies in the organization of freight shipments.

The USSR People's Control Committee established that the situation with regard to the safekeeping of material valuables is particularly intolerable at the Western Siberian Administration. In 1981, 265 cases of losses during shipment were discovered, and in 1982 the figure was 260. In certain of the aviation enterprises which come under this administration there are gross violations of state discipline, the Civil Aviation Ministry rules governing freight shipments are not observed, and the safekeeping of the freight is not provided for.

Take, for example, the Kemerovo Aviation Enterprise. Its warehouse lacks a system to account for so-called ownerless valuables. And, in fact, there is no person who accepts incoming cargo. As a rule, it is put into the storage area by the senders themselves. No inventory of the cargo is taken. At the time of the inspection there were about 500 pieces of cargo being kept here, and every fourth one had been opened and its contents was accessible; every third piece was located outside in open areas.

With regard to the violation of existing procedures at aviation enterprises, the freight handlers who accept and dispatch cargo are not materially responsible persons, because contracts have not been concluded with them. There have been numerous verified incidents in which members of a cabin crew have refused to accept cargo on board an aircraft, and if the cargo has been lost or found to be incomplete, they do not bear the responsibility. Search procedures for missing freight are poorly set up. The officials at the Kemerovo Aviation Enterprise intentionally misrepresented the report data to significantly reduce losses from shortages and thefts.

Many indisputable complaints of losses and shortages of goods handed over for shipment have been rejected unjustifiably on the basis of various formal pretexts, and internal investigations have not been conducted. The work of the claims service of the aviation enterprises has been directed toward shifting the blame for cargo losses by all possible means onto the customer. For example, the Roskul'ttorg Base was refused damage compensation for the loss of anti-fog headlights because the printing did not come through on their copy of the bill. The Prokopyevsk Automatic Mine Equipment Plant conducted a nine-month correspondence regarding a search for some cargo, which, as it turned out, had been lying on the floor of the aviation enterprise's warehouse the entire time.

Similar inadequacies in the safekeeping of cargo in transit have been discovered at the Tolmachevo Aviation Enterprise which does have the necessary procedures in its storage and freight handling areas; last year this resulted in the theft of vehicular spare parts, electrical equipment, tape for tape recorders, radio equipment, televisions, picture tubes and other valuables. The figures for incomplete shipments by this aviation enterprise have been reduced. The 1981 and 1982 reports show 79 incomplete shipments, for which customers made claims amounting to 31,100 rubles. In fact, the number of incomplete shipments was twice this figure, and the resulting losses exceeded the report figures by a factor of five.

Nor are the Barnaul, the Gorno-Altay and a number of other aviation enterprises taking the appropriate measures to ensure security for cargo in transit.

At some freight services employees close their eyes to inadequacies in labeling and packaging, and this leads to losses and thefts. For example, the Baku Airport systematically sends to all parts of the country wire cables which are not packaged and do not have proper transit and destination labels. Despite the MGA ban, the Ufa and Kemerovo airports accept for shipment loose substances in paper bags, which do not protect the freight, but which do mess up the cargo holds of aircraft and special trucks. The Minsk Airport frequently sends ball bearings in cartons which cannot take the weight, and this results in losses and delivery delays. The Sverdlovsk, Novosibirsk, Chelyabinsk, Minsk, Lvov and a number of other airports accept goods addressed to bases of the "Republic Haberdashery Organization," the Republic Trading Organization for Educational Supplies," or the "Republic Trading Organization for Household Goods" in packaging which does not meet the standards or which violates the rules regarding sealed or unsealed packaging. There are instances in which goods are trans-shipped without permission. An especially large number of such cases has been accumulated by the Moscow and Leningrad airports, and this hampers the work of the warehouses and delays the delivery of cargo.

The question of how to organize the work of the freight service and to provide security for cargo is being solved in an unsatisfactory manner at the new Krasnoyarsk Airport; as a result, this airport was closed to incoming cargo for about a year. Many complaints are received concerning operational violations at the following civil aviation administrations: the Moscow transport administration, the Ukrainian, Eastern Siberian, Volga, TSUMVS /Central Administration of International Air Services/, the Estonian and the Uzbek administrations.

The USSR People's Control Committee pointed out in its memorandum that at the Uzbek Civil Aviation Administration damages from shortages and thefts of cargo have amounted to several thousand rubles over the last two years, while compensation for the state has come to only one-tenth of this amount. Many aviation enterprises take a wasteful attitude toward the consumption of fuel and lubrication materials. According to data from this administration, there was a shortage of fuel amounting to 15,000 rubles on the day of the inspection, but these data proved unreliable, since the removal of the residue at storage areas for fuel and lubrication materials was not carried out according to the proper procedures established in the appropriate rules. An inspection of just two aviation enterprises, the ones at Tashkent and Fergana, which was carried out with assistance from specialists of the Main Petroleum Inspectorate revealed a shortage of 440 tons of fuel worth 53,900 rubles.

A most unfavorable situation with regard to the safekeeping of socialist property has developed at the Nukus Aviation Enterprise. There have been verified instances here of the sale to individuals of subsidized materials in short supply and special clothing, as well as instances of state property being transferred to employees for their personal use.

The fact that these instances of theft, shortages, spoilage of material valuables and wastefulness occur is explained largely by the laxness on the part of administration officials in the demands which they make on aviation enterprise commanders. Officials at a number of enterprises and services are not fulfilling measures to ensure the safekeeping of socialist property; however, this is not subjected to fundamental criticism, and a careful attitude toward the people's wealth is not created in the labor collectives. The MGA administration for the Organization of Shipments does not provide an in-depth analysis of the state of affairs at enterprises; it conducts only superficial inspections of their work, and it has only a weak influence on the work to improve the safekeeping of freight in the national economy.

The USSR People's Control Committee directed attention to the fact that neither the ministry or the local units have established the necessary system for departmental monitoring of security for material valuables. In March of last year, for example, a comprehensive inspection was carried out of enterprises of the Western Siberian Administration. The MGA committee document noted formally that the appropriate requirements concerning the establishment of procedures for the organization of freight shipments are not being met. At the same time specific inadequacies and the officials responsible for incomplete shipments were not revealed. This has created a situation in which there is a lack of responsibility on the part of the command staff of the administration and the enterprises.

The MGA Collegium adopted a resolution which made it mandatory for all heads of administrations, enterprises, organizations and plant directors in civil aviation to take the necessary measures to make fundamental improvements in their production-economic and financial activities, and to eliminate inadequacies in the safekeeping of socialist property as revealed by the

USSR People's Control Committee. A series of organizational and technical measures was developed for the following purposes: to improve the system for planning freight shipments and to increase their effectiveness; to introduce new means of mechanization in freight handling processes, to ensure the safekeeping of aviation equipment, baggage and freight, to better utilize storage facilities and to improve the working conditions of the service personnel.

On the basis of materials from the inspection conducted by the USSR People's Control Committee, and from the discussion of this question at the MGA Collegium session, an order of the Civil Aviation Administration has been published "Concerning Measures to Ensure the Safekeeping of Socialist Property at Enterprises and in Organizations of Civil Aviation." In accordance with the regulations on discipline for civil aviation employees, strict penalties have been established for officials who do not ensure the safekeeping of freight, mail and baggage during shipments. For example, the head of the Western Siberian Administration, G. Sarafankin, was warned about incomplete performance of duties, and his first deputy, P. Popov, was released from his position. The commander of the Kemerovo Aviation Enterprise, A. Khokhlov was also released from his duties. In partial compensation for the losses which he caused, a sum amounting to the average monthly wage will be recovered from him according to the established procedure.

B. Tazhenov, commander of the Nukus Aviation Enterprise, was warned about incomplete performance of duties for permitting instances of monetary thefts at the enterprise; compensation amounting to the average monthly wage will be recovered from him for the losses which he has caused. Serious reprimands were given to the first deputy head of the Eastern Siberian Administration, I. Mashukov, and to the first deputy head of Sheremetev Airport, B. Yedidovich, for serious inadequacies in the organization of freight shipments and the growth of claims for damaged and unreceived freight.

A number of other administration officials were severely punished as well for weakening the monitoring of security for socialist property in the enterprises and organizations subordinate to them.

The MGA order emphasizes that it is the task of the command-management staff, the party, trade union and Komsomol organizations, the control and inspection organs of the community and of the labor collectives in the industry to raise the level of organization in freight shipments, to strengthen the struggle against infringements of socialist property. Strict procedures should be instituted everywhere to keep track of and preserve material valuables, and to fight decisively against waste and bad management.

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## RAIL SYSTEMS

### NIKIFOROV NOTES PROBLEMS IN LOCOMOTIVE FLEET OPERATION

Moscow ELEKTRICHESKAYA I TEPLOVOZNAYA TYAGA in Russian No 12, Dec 82 pp 2-5

[Report on interview with B. D. Nikiforov, USSR deputy minister of railways, by V. N. Bzhitskiy and I. A. Gorelik: "In Fraternal Union--Toward New Successes"; date and place of interview not given]

[Excerpt] [Question] It is, of course, always pleasant to talk about the good. But the party teaches that even during holidays we must not forget about the existing shortcomings and difficulties. You know, it is not a secret that of late railway transportation has been working with great tension. And not lastly because of the fault of the locomotive operation. So there, is it impossible to discover the reasons?

[Answer]: It is possible, and I would say, even necessary, without fear of clouding the holiday mood of those who really deserve it.

At present the most acute problem in locomotive operation is the low technical state of the traction vehicles, especially diesel locomotives. During the current year it continues to remain unsatisfactory and on some railroads even deteriorated. Thus, the depot percentage of defective diesel locomotives increased by 0.7 and there was an increase in the number of cases of damage and unplanned repairs.

The worst depots are Chu, Arys', Ayagus, Yershov, Verkhniy Baskunchak, Kotovsk, Nikolayev, Emba, Saksaul'skaya, Makat, Murom, Yudino, Khavast, and Ruzhino. The reasons for the situation that has developed here are the non-observance of the planned preventive system of inspection and repair of diesel locomotives, the most flagrant violations of their technical maintenance, and the low level of labor and technological discipline.

Let us take, for example, the Arys' Depot. Here, despite instructions from the Ministry of Railways, individuals without special training were admitted to work with such important units as the bearing assembly. As a result, there began massive damages to the crankshafts and there was an increase in the number of diesel locomotives lying idle in unplanned repair. In the Chu Depot there is the highest damage rate of traction engines in the railway net because of the non-observance of the technology of their repair and operation. Moreover, here they do not watch for quality cooling water and allow the refilling of the diesel locomotives with unboiled water even at the technical maintenance



point in the main depot! Under such conditions one cannot speak of reliable work on locomotives.

One's attention is also aroused by the fact that in these and also in some other depots there are those among the locomotive brigades which simply refuse to fulfill the obligations with which they have been charged with respect to the technical maintenance of the TO-1 Diesel Locomotives. Such a situation is completely intolerable. The depots mentioned have been placed under special control.

[Question] What, in your view, must be done in order to improve the technical state of diesel locomotives?

[Answer]: Above all, strictly observe the planned preventive maintenance system and the technology of inspection and repair, and secure equipment of higher reliability. There are no other ways. A depot director may in pursuit of the immediate advantage, "throw out" to the line an uninspected locomotive or one not delivered in time for scheduled repair. Such an "advantage" is inevitably turned around by the deterioration of the technical state of the locomotives and in the final analysis--by an increase in the non-scheduled repairs.

This means that once and for all we must stop the faulty practice of the violation of the scheduled preventive maintenance system and "overcome" this disease. And [we must achieve] that everyone--from the repairman to the engine-driver and his assistant--does his work honestly and conscientiously. Only then will there be the proper technical state of the locomotives and the requisite order in their operation.

We are placing a great deal of hope on the overhaul of diesel locomotives in the plants of the Ministry of Railways, especially on their overall modernization, which envisages more than 40 work operations per diesel engine, auxiliary equipment and locomotive underframe.

Overall modernization has been included in the repair plans for the Izyum, Dnepropetrovsk, Daugavpils and Poltava Diesel Repair Plants. It is necessary to take all measures for its earliest possible introduction.

[Question] And, of course, the broad dissemination of progressive experience is of great significance. Could you not name collectives where the operation and repair of diesel locomotives is organized in the best manner?

[Answer]: With pleasure. The Belorussian Trunkline has been operating reliably for many years and things are not bad on the Severnaya, Moskovskaya, Pridneprovskaya, L'vovskaya and Moldavskaya Railways. If we talk about depots, we can name Sol'vychegodsk, Zhmerinka, Grebenka, Atkarsk, Sarepta, Uzlovaya, Ashkhabad and others.

At one time your journal dealt in detail with the experience of these depots. The printed materials provide a sufficiently complete idea of it. I will merely note that the observance of the rules for the repair and operation of diesel locomotives, the mechanization of labor-intensive processes, the introduction

of production lines, even with an increased volume of work and a shortage of spare parts, make it possible to reduce the idle-time during repair by a factor of 2 to 3, compared to the average-net length. Moreover, high quality of repair is secured, that is, the technical state of the locomotives is improved and labor productivity is increased.

[Question] You dwelt in sufficient detail on the problems of the diesel locomotive fleet. But how are things with respect to the electric-powered rolling stock?

[Answer]: Unfortunately, here too a number of negative phenomena manifest themselves, although on the whole the electric locomotive workers provide more steadfast work. During the current year, there was an increase in the number of unscheduled repairs of electric locomotives and damages, and the idle-time of locomotives in repair increased. Most often there is damage to the traction engines, to a somewhat smaller extent--to the wheelsets, the electrical equipment and auxiliary machines.

The work is unsatisfactory at the Mukachevo, Sverdlovsk-Sortirovochnyy, Perm'-Sortirovochnaya, Smychka, Baladzhary, Samtrediya, Sukhumi, Yerevan Depots and others. The reasons for this are basically the same as those for the diesel locomotives. On the L'vov Railway, for example, the unscheduled repair significantly predominates over the scheduled repair among the TO-3 because of the low quality of repair and the runs of the locomotives.

In the Baladzhary Depot the schedule for placing electric locomotives in repair is put together not in accordance with norms of the run, but in accordance with the daily work on the line, but even then they are not observed. Here we have a bad situation with respect to the cadres of the commanding personnel and the metal workers, and the technical equipment is inadequate. There is no order in the maintenance of electric locomotives on long runs: Locomotives that are uncoupled because of deficiencies remain idle for a long time in stations, they drive trains with the more critical mass, and the locomotive brigades do not carry out the TO-1 [maintenance].

In order to correct the situation that has developed, the leadership of the Ministry of Railways demands the unconditional implementation of the order 10Ts of 1981, above all of the established plans and technology of repair and the maintenance of electric locomotives, bringing the staff of repair cadres to full strength, increasing their qualifications, and equipping the depots with special equipment and devices, as is envisaged by the accepted standards. Of great significance is the mechanization of labor-intensive processes, the modernization of electric locomotives and the securing of spare parts.

Significant attention must be given to the reduction of the idle-time of electric locomotives for TR-1 [current repair]. In connection with this, the experience of the Dema Depot deserves broad dissemination. Here a complex of mechanisms and devices, constructed by skillful depot workers, are being used with success.

It is very important to increase the technical equipment of the maintenance points for TO-2 [current repair], where a greater volume of work could be carried out. Of course, appropriate conditions are required for this. For

example, at the Krasnyy Liman Depot, known for its highly-developed repair base, a model covered maintenance station was built not long ago. In addition to the project, the depot people equipped it with an overhead-track hoist. It became possible to quickly replace the current collector, the high-speed switch, or other equipment. For the removal of large deficiencies, a specialized stall was earmarked.

A number of interesting and original solutions for the repair of electric locomotives and electric trains can also be found in such progressive depots as Rybnoye, Lyangasovo, Georgiu-Dezh, Inskaya, Moskovka, Leningrad-Baltiyskiy, Nizhniy-Tagil, etc. The task consists in the more courageous introduction of progressive experience and the manifestation of the maximum efficiency, without prompting from above.

[Question] One of the most important indicators of the work of railway transportation and in particular locomotive operation is the safety of train movement. Tell us, please, what is the situation in this sphere?

[Answer]: The train drivers and their assistants always have been and remain the most disciplined segment of the railroad workers. The overwhelming majority of locomotive brigades are working honestly and conscientiously, not allowing defects in the train and maneuvering work and, what is more, preventing the consequences of violations permitted by the workers of other services.

The collectives of the depots of Gomel', Kurgan, Vikhorevka, Grebenka, Kupyansk, Ozherel'e, Moskva III, Moskva-Passazhirskaya-Kievskaya and many others are vigilantly keeping their labor watch. During the current year, by comparison with the past year, there was a slight reduction in the number of gross violations of the rules governing the safety of movement. But as a whole the situation continues to remain tense. Things developed especially unsatisfactorily in the depots imeni Shevchenko, Kiev-Passazhirskiy, Orsk, Leningrad-Finlyandskiy, Nakhichevan, Yaroslavl'-Glavnyy and some others.

The basic reasons for accidents and the passage of inhibit signals are, as before, gross violations of the technical operation rules and labor discipline: The sleeping of locomotive brigades on the route, inattentive observation of the signals, the tardy and incorrect control of brakes, etc. The workers of the line know about these cases and are drawing the appropriate conclusions.

The task of the command and instruction staff for locomotive operation is to sharply intensify the work with locomotive drivers and their assistants, especially with those who admit violations of discipline and safety regulations and those who have little experience. It is necessary to increase the exactingness in regard to the strict execution of the Rules of Technical Operation and the appropriate instructions and orders by the Ministry of Railways. In its turn, the leadership of the ministry is increasing its demand vis-a-vis production leaders.

[Question] The results of work depend to a great extent on the conditions that will be created for the full-value rest of locomotive drivers, assistants and fitters.

[Answer]: Undoubtedly. The party and the government ascribe great significance to the improvement of work and rest conditions of the workers, including that of locomotive drivers. In the plan of the 11th Five-Year-Plan the Main Administration envisages the expenditure of 25.7 million rubles for these purposes. Thirty-two sanitary and housing facilities will be built, as well as 33 holiday homes, 16 dining-halls, and 2 dispensaries, and 14 covered maintenance stations have been put into operation after reconstruction and construction. The tempo of such work is increasing as scheduled.

It goes without saying that in a short discussion it is difficult to encompass all questions that are connected with the activity of locomotive operation. I believe that a discussion of them is still ahead.

[Question] Thank you for the discussion.

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## RAIL SYSTEMS

### LOCOMOTIVE, RAIL CAR PLANT PERFORMANCE FOR 1982

Moscow GUDOK in Russian 18 Jan 83 p 2

[Article: "How the Plants Operated"]

[Text] The second year of the 11th Five-Year Plan has come to an end. Enterprises of the transportation industry have worked hard during this year. On the whole they fulfilled the 1982 plan for producing commercial output, increasing labor productivity and profit, and also repairing steam engines, electric locomotives, passenger cars and steam tow engines for electric locomotives. As compared to 1981 the volume of industrial output increased by 4 percent, and a considerable proportion of the increase in output was obtained as a result of increased labor productivity.

For the successes that were achieved the Sverdlovsk electric locomotive repair plant and the Moscow car repair plant imeni Voytovich were awarded the Challenge Red Banners of the CPSU Central Committee, the USSR Council of Ministers, the AUCCTU and the Komsomol Central Committee. From the results of the fourth quarter the collectives of the Belikolukskiy LVRZ, the Moscow LRZ, the Rostov ERZ, the Oktyabr'skiy EVRZ and the Tselinograd VRZ were awarded the Challenge Red Banners of the Ministry of Railways and the Central Committee of the trade union of rail transportation and transport construction workers. Four plants were awarded bonuses for the second time and four for the third time.

But not all the enterprises successfully fulfilled the planned assignments. Last year the Orenburg and Tashkent steam engine repair plants, the Ulan-Ude locomotive and car repair plant, the Krasnoyarsk electric car repair plant, and the Barnaul and Roslavl car repair plants operated irregularly. During past years these enterprises have organized production unsatisfactorily, violated the rhythm of product output, and utilized production capacities and internal reserves inadequately. These and other plants are to blame for the failure to fulfill the plans for electric trains and cargo cars and the output of spare parts.

Up to this point the plants have not been satisfying the needs of the railroads for the repair of pulling rolling stock or covered and refrigerated cars. During two years of the 11th Five-Year Plan they did not provide repair (envisioned by the plan) of more than 180 sections of steam engines, 130 electric locomotives, 1,600 cargo cars, 90 passenger cars and 160 refrigerated cars. None of the kinds of rolling stock were completely repaired by the plants.

An alarming situation has arisen with respect to the output of the most important spare parts. Industrial plants do not provide for their delivery in the necessary quantities. Therefore enterprises of the plant main board have been forced to organize their own production of a number of components and spare parts. A certain amount of success has been achieved in this. They have managed to solve technical problems related to manufacturing piston rings for D100 diesels, compressors for KT-6 diesels, sleeves for D40 diesels, and motor-axle bushings, rotors and blades for TK-34 turbocompressors. But the plan for the manufacture of gears for electric steam locomotives in 1982 was fulfilled by only 72.6 percent. Sleeves for working cylinders of D100 diesels--by 97.5 percent, pistons--by 81.4 percent, and rings--by 94.4 percent; locomotive brake shoes--by 91.5 percent, and heads of automatic couplers--by 86.7 percent.

The plants utilize production capacities and labor and material resources poorly, and do not devote enough attention to mechanization of technological processes. The average annual coefficients of the utilization of capacities amount to 90-97 percent, and for the repair of refrigerated wagons--only 82.7 percent. At enterprises of the plant main board the coefficient of shift work amounts to an average of 1.37, and at individual plants it does not exceed 1.18. A total of 4.3 percent of the metal cutting equipment is used on three shifts.

At enterprises of the transportation industry up to this point 43 percent of the workers are engaged in less productive manual labor. The proportion of technically substantiated norms at the Tbilisi EVRZ is 47 percent, the Bogotol VRZ--59 percent, and the Astrakhan TRZ--62 percent, while the fulfillment of the existing norms at these plants exceeds 150 percent, and for individual shops and occupations it reaches 200 percent.

There are many complaints against plants from the railroad lines about the poor quality of repair of rolling stock. The Tashkent TRZ has complaints against every third steam engine, and the Zaporozhye ERZ--against every fourth electric locomotive. Inspections by the inspections staff of the Ministry of Railways showed that the reduced quality of repair takes place mainly because of violations of technological discipline and poor control on the part of the supervisory personnel of the shops and the division for technical control.

Thus the collectives of the plants are still greatly indebted to rail transportation. In the third year of the 11th Five-Year Plan they should provide for prompt repair of the rolling stock and satisfy the needs of the railroads for spare parts.

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## RAIL SYSTEMS

### LOCOMOTIVE FLEET MAINTENANCE IN 1982

Moscow GUDOK in Russian 27 Jan 83 p 1

[Article: "The Condition of the Locomotive Fleet"]

[Text] In the second year of the 11th Five-Year Plan, because of the poor work rhythm of the locomotive fleet, several areas of railroad did not satisfy the needs of the national economy for the shipment of fuel, timber and other important cargos. These omissions were criticized at the November (1982) Plenum of the CPSU Central Committee. Comrade Yu. P. Andropov in his speech directly pointed out the low level of organization of repair and operation of steam and electric locomotives.

In 1982 in the network as a whole the technical condition of the locomotive fleet deteriorated. The depot percentage of unrepaired electric locomotives increased 0.2-fold as compared to 1981 and steam engines--0.7-fold, and now they exceed the established norm 1.17-fold. There was an increased amount of damage on route. The number of locomotives in disrepair exceeded the norm for steam engines on 22 railroads, and for electric locomotives, on 7. The situation was especially favorable on the Alma-Ata, Far Eastern, Baykal-Amur, Gorkiy, Volga, Central Asian, Western Kazakhstan, Azerbaijan and Transcaucasian Railroads.

Because of the serious violations in the organization of service and repair of locomotives there has been an increased number of unplanned trips to the depot: steam engines--2.8 cases per 1 million kilometers of travel, and electric locomotives--0.19 cases. The average network amount of idle time of locomotives during repair has increased: during TR-3 of steam engines--by 0.8 days, and electric locomotives--0.3 days; during TR-1 of steam engines--0.2 hours, and electric locomotives--0.4 hours; and during TO-3 of steam engines--0.9 hours, and electric locomotives--0.1 hours. There has been an increase in the number of violations of delivery times of electric locomotives and steam engines for technical inspections.

The deterioration of the technical condition of the locomotive fleet and of its operational reliability is partially due to objective factors: the assimilation of new theories of towing rolling stock, the poor supply of the depots with technological fittings and nonstandard equipment, the shortage of spare parts and the shortcomings in material and technical support, and on certain railroads --the poor development of the depot repair base. But still for the most part

violations of plans to improve locomotives and the poor quality of their fulfillment are explained primarily by the unsatisfactory organization of repair, the poor qualifications of the workers, and the incorrect, and sometimes simply irresponsible actions on the part of managers of a number of depots. For example, in the Chu depot, in spite of the fact that the ministry categorically forbade it, steam engines were used for trains when their towing engines were partially dead. One cannot be surprised that it is precisely here more frequently than on any other part of the network that steam engines break down. Diesels were sent to the Chu and Sary-Shagan depots with fresh water. At the Dzhambul depot during current repair of a 2TE10V steam engine No 3875 they placed a rubber hose that was not intended for a pressure of 4.5-5 atmospheres in the pipe of a centrifugal filter. As a result it broke when the train was running. The machine operators could not eliminate the defect and the auxiliary locomotive had to be used.

A good deal of slipshod work is done because of the fact that the machine operators on route do not check on the conditions of the locomotives. Here are a number of eloquent examples. At the Emba depot the locomotive brigade, after preventive repair, went out on a steam engine without checking the cooling system of the diesel engine in which the circulation pipes were cut off. As a result the diesel overheated and broke down. In the Anisovka depot the locomotive brigade, while traveling along the Urbakh-Nalivnaya section, discovered increased vibrations of the compressor. An inspection showed that the fastener had weakened and one of the bolts had been torn off. Attempts to eliminate the problem led to a situation where the washer between the compressor and the delivery pipe broke. The train was stopped and the auxiliary locomotive had to be used. And all this took place because of the carelessness of the locomotive brigade which when receiving the locomotive did not check the fastening of the compressor.

Recently at plants and depots there has been extensive development of work for modernizing locomotives. A large group of VL10 and VL8 electric locomotives have been updated. In the VL60K series 17 have been re-equipped. The rectification installations have been replaced on more than 30 VL60K locomotives. Comprehensive modernization of TE3 and 2TE10L steam engines is increasing. The plants and depots have been supplied with technical specifications. Control over the fulfillment of this work has been increased.

But on the whole the plans for modernizing the towing rolling stock were not fulfilled in 1982. Of the 90 jobs on electric locomotives only 4 were carried out by 100 percent, 2--by 50 percent, and 23 were not done at all. The plants did not install a single motor compressor on VL60K electric locomotives, and the machine casings of the gear drives were replaced on 37 electric locomotives instead of 150. Far from the full list of work is being carried out in the process of comprehensive modernization of steam engines.

Special concern is aroused by the increased number of violations of conditions for the labor and recreation of locomotive brigades. In the network as a whole there were 17 percent more cases of increased working time. This is especially unfavorable on the Far Eastern, Alma-Ata, Tselinaya, Sverdlovsk and Southern Ural Railroads.



In 1982 for all kinds of towing not a single planned indicator was met for the utilization of locomotives. Because of the reduction of the average daily productivity in the network it was necessary to keep about 190 extra electric locomotives and more than 320 steam engines, and because of the failure to carry out the average daily running time it was necessary to keep more than 260 electric locomotives and about 450 steam engines. As a result, the losses for rail transportation because of maintaining additional locomotives exceeded 180 million rubles. The existence of this "nonplanned" fleet of towing equipment is not supported by fuel-energy, material or labor resources, and it caused an increase in overtime work of locomotive brigades and repair workers, disorganized the fulfillment of the repair program and contributed to deterioration of the technical condition of the locomotives.

According to our data, on the main railroad lines of the country there has been some improvement in the technical condition of electric locomotives. In February-March there is reason to count on positive changes in the maintenance and operation of steam engines. The Ministry of Railways has set the goal of fully restoring the operational reliability of locomotives by the end of the year on all railroads.

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## RAIL SYSTEMS

### RAIL SYSTEM CAPITAL INVESTMENT, REPAIR IN 1982

Moscow GUDOK in Russian 4 Feb 83 p 2

[Article: "Capital Investments and Repair"]

[Text] The startup of new production capacities, the development of a depot repair base, and strengthening on the basis of capital repair make it possible to considerably improve the conditions for the operation and service of towing rolling stock. In the capital construction of locomotive facilities, however, there are some arrears. In 1982 only 79.2 percent of the funds allotted for these purposes were assimilated. Of the 71 startup projects, only 49 were put into operation. The plan for construction and assembly work was fulfilled by only 67.3 percent. The rates of this work dropped on the Moldavian, Tselinaya, Gorkiy, Eastern Siberian, Kemerovo and Volga Railroads.

This took place mainly because of the unsatisfactory performance of work by organizations of the Ministry of Transport Construction. At the end of the year in the Syrzan locomotive depot they had fulfilled only 40 percent of the work, in the Altay engine and car depot--48.4 percent, and for preventive maintenance inspection and equipping of electric locomotives at the Artyshta station--by 76.2 percent. The funds allotted for expanding the Vikhorevka locomotive depot were assimilated by only 26 percent, for renovation of the Lobnya locomotive depot--by 52.4 percent, and for the construction of a TR-2 shop at the Mineral'myye Vody depot--by 73.5 percent.

As compared to 1981 the rates of work of the railroad construction trusts have decreased, especially of the Oktyabr'skaya, Moldavian, Dnepr, Sverdlovsk and Northern Caucasian Railroads. Of the 40 startup projects they only put 32 into operation.

The assembly of buildings for technical service points made of light metal structures of the Orsk type is being carried out unsatisfactorily on the railroad network. From 1978 through 1981 they received 223 sets of these buildings and they have assembled only 168 of them. In 1982 it was planned to assemble 29 more buildings, but they assembled only 21 of them. The shortage of premises for technical service points seriously complicates the technical servicing of locomotives.

In 1982 more than 10,000 units of nonstandard equipment manufactured by enterprises of the plant board, railroad repair and machine plants and road repair shops were sent to the locomotive depots. Means of mechanization of labor-intensive processes were introduced promptly in the Krasnoufimsk, Kotovka, Belgorod, Povorino, Vitebsk, Kurgan, Yaroslavl-Glavnyy and Vologda locomotive depots. The situation is not as good with respect to the installation of flowlines in TR-3 shops. Only 17 of the 23 were put into operation. Because of the lack of batching equipment assignments were not fulfilled by the Kuybyshev, Western Kazakhstan, Oktyabr'skaya and Transcaucasian mainlines.

Capital repair is being carried out slowly on depot and equipping facilities. Up to this point it has not been completed in the houses of recreation at the stations of the Sovetsk-Baltic Railroad and the Sergach-Gorkiy Railroad.

Last year the Lvov, Moldavian, Southern and Transcaucasian Railroads were not able to ship in the necessary quantity of sand.

In the third year of the 11th Five-Year Plan it will be necessary not only to eliminate the arrears that have formed in the development of the depot base, but also to fulfill ahead of schedule the plan for the startup of capacities and facilities established for railroad construction workers and enterprises of the Ministry of Transport Construction. Taking advantage of the favorable weather conditions, the builders and installation workers should gain enough speed to carry out successfully the tasks that have been set for them.

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## RAIL SYSTEMS

### BAM TUNNEL BY-PASS ROUTE CONSTRUCTION NEARS COMPLETION

Moscow PRAVDA in Russian 28 Mar 83 p 1

[Article by V. Orlov, PRAVDA correspondent: "The Pass Has Been Vanquished: A Report on the Details"]

[Text] A labor victory has been gained by the builders of the Buryat Section of the BAM--operational traffic has been begun for trains as far as the Okusikan Siding. The first railroad train has overcome the Severo-Muyskiy Mountain Range.

The principal railroad by which this granite obstacle will be overcome by the future express trains is the 50-kilometer tunnel under the mountain range. But it is still under construction and, as provided for by the plan, will be put into operation in 1986. And while the underground corridor is being drilled, it has been decided to make a railroad by-pass along the surface of the mountain range through the Angarakan Pass. Trains will run through it temporarily, delivering freight for the further construction of the mainline to the East, to the "Terrible River"--the Vitim, and further through the northern part of Chita Oblast to the place where the last "golden" spike of the mainline will be driven.

The length of the by-pass railroad track is 26 kilometers. They did not surrender easily to the transport builders. You know, on this modest-sized segment 11 bridges had to be built, along with about 50 metal and reinforced-concrete water pipes. They had to pour into the roadbed and move almost 4 million cubic meters of earth, a large portion of which was composed of rocks.

How much did it cost merely to cut through under the by-pass! In the taiga people take gasoline-driven power saws and pile up trees in the form of a wall. But here it is a completely different matter. On the snow-covered peaks of the Severo-Muyskiy Mountain Range, it turns out there is a kind of "Trans-Baykal Jungle." This consists of compact growths of cedar trees which cover the rocky cliffs with a continuous carpet. It could only be pierced through by using axes. And this had to be done during a cold, hard frost and in a strong wind. And that's the way it was for all 26 kilometers through the mountain pass.

The BAM workers passed quite a few tests with honor. And this is now behind them. Their success was facilitated by many things. Operating on this stage was a temporary party organization, combining Communists from all the related organizations. And, it should be noted, in the construction of this by-pass party members comprised more than one-third of the total number of builders employed here. They imparted a tone to the competition and worked on the most difficult sections. R. Mukharov, the partkom secretary of the Nizhne-angarsktransstroy General-Contracting Trust, cited the names of the most outstanding ones. These were the brigades led by CPSU members R. Malov, P. Sheronov, V. Chernikov, V. Britikov, and A. Bondar.

Also distinguishing themselves were the groups of the 597th construction-and-installation train, the SU-88 blasters, the workers of the 97th bridge-building detachment, the 136th and 138th mechanized columns of the Zapbambstroymekhanizatsiya Trust.

... And here comes the first work train, decorated with the traditional red calico bunting and evergreen garlands, and carrying its honorary passengers, slowly moving along the rails through the mountain pass.

To the sounds of an orchestra and loud "hurrahs" the train arrives at the Okusikan Station. Under the wheels of the train lies the symbolic "silver" spike. Resounding with a pure echo over the snow-capped peaks of the mountains and the taiga expanses is the first sound of a locomotive. The BAM has a new station!

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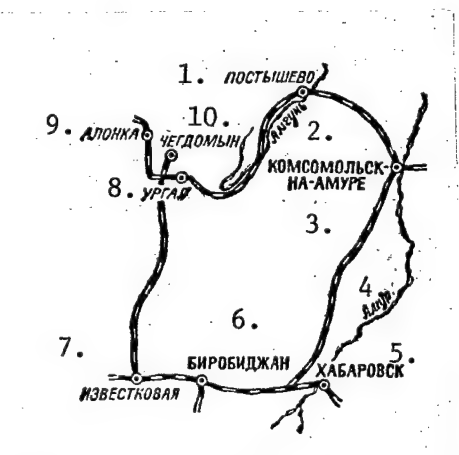
## RAIL SYSTEMS

### INFRASTRUCTURE DEVELOPMENT ON NEW URGAL-POSTYSHEVO BAM SEGMENT

Moscow EKONOMICHESKAYA GAZETA in Russian No 12, Mar 83 p 18

[Article by A. Malyy, correspondent: "The BAM: A New Section Put Into Operation"]

[Text] Train traffic has been inaugurated on the Urgal-Postyshevo Line. This 303-kilometer railroad route of the BAM's eastern wing was put into permanent operation ahead of schedule. Thus was fulfilled one of the important points of the socialist pledges by the railroad construction warriors, patrons of the main line -- emissaries from the Ukraine and Tajikistan, Khabarovskiy Kray, Novosibirsk, Volgograd, and Saratov Oblasts.



#### Key:

- |                         |                 |
|-------------------------|-----------------|
| 1. Postyshevo           | 6. Birobidzhan  |
| 2. Amgun' river         | 7. Izvestkovaya |
| 3. Komsomol'sk-na-Amure | 8. Urgal        |
| 4. Amur river           | 9. Alonka       |
| 5. Khabarovsk           | 10. Chegdomyn   |

The route from Urgal to Postyshevo passes through some very complex conditions: mountain ranges, swamps, permafrost, and numerous rivers. In order to speed up earth-moving operations, extensive use was made here of a non-transport scheme for excavating earth, utilizing truck-mounted scrapers and heavy-duty bulldozers. Advanced technology of bulldozer operations was introduced. There were also changes made in the traditional methods of building bridges. Instead of massive footings they began to use columnar-type supports, and this greatly reduced labor expenditures.

In order to ensure the maximum productivity in building the columnar supports, the specialized Bridge Detachment No 54, the only one in the Glavmoststroy system, was created within Trust No 10. The transition to extensive use of columnar structural components allowed us to mechanize all the operational processes, to eliminate heavy manual labor in excavating the permafrost in the construction pits. On the whole, labor consumption and the time periods required to erect the supports were reduced by more than two-thirds.

More than 32 million cubic meters of earth were moved on the new section; 249 man-made structures were built, including 69 large and medium-sized bridges; several hundred kilometers of mainline and station-yard tracks were laid and ballasted. All the distribution points have been equipped with electrical centralization of switches and signals, the mainline communications have been put in place, the LEP /electric-power transmission lines/ and technical service buildings have been constructed.

Many social problems have also been solved. For the inhabitants of the Urgal--Postyshevo section houses have been built with well-laid-out apartments for family living with 13.5 square meters of total area for each person. It is planned to provide living space for all workers at every station. Insofar as possible the best natural sites have been chosen for the residential settlements. This made it necessary to consider the variants for situating not only the settlements but also the stations themselves. For example, near the settlement of Suluk an area was chosen with the best microclimatic conditions. Hence, the construction of the station was moved 4.5 kilometers closer to the settlement.

This new railroad section of the BAM is also marked by complex hydro-geological conditions: the bottomlands of the Amgun', which are subject to flooding, lens-type permafrost, perched water tables, etc. significantly complicated the planning and construction of buildings and facilities. Thus, the settlements of Soloni and Suluk were situated in areas with a high-temperature permafrost, while near the stations and settlements of Gerbi, Dzhamku, and Postyshevo compact filling-in of the territory had to be done.

The planning of the railroad workers' settlements as well as the station buildings was carried out by the appropriate organizations of the krais and oblasts sponsoring the construction of the Urgal--Postyshevo section. These include the Tadzhikgiprom and Dal'giprotrans Institutes, the Saratov Branch of Zheldorproyekt, Volgogradgrazhdanproyekt, Penzagrazhdanproyekt, and Novosibirskgrazhdanproyekt.

The settlements have adopted a basically two-storey type of construction, while for the organization of the center provisions have been made for four-storey apartment houses limited to 20 percent of the entire built-up area.

The number and capacity of the technical-service buildings at the stations have been established, taking into account the conditions for providing the necessary through-put capacity of the railroad. Included among the large, production-type facilities are the locomotive depot at the Suluk Station, the operational-repair center for track service at the Amgun' Station, combined operational-repair centers for servicing track, communications, and electric-power supply, combined boiler and transformer sub-stations, water-storage and purification facilities. All the buildings were erected basically by using standardized structural elements and components.

The state commission awarded "good grades" to the micro-rayon's multiple-unit apartment houses. In honor of the 60th anniversary of the formation of the USSR the socialist pledges undertaken by the sponsors of the mainline--persons from Novosibirsk Oblast--were fulfilled ahead of schedule.

"The Siberians were aided in outstripping the scheduled time period by the introduction of the Zlobin method," stated the chief of the NovosibirskBAMstroy construction-installation train. Having concluded an agreement on a competition according to the principle of the "workers' baton" with his countrymen--the construction groups of Novosibirsk Oblast, the consolidated, comprehensive, Komsomol-Youth brigade of V. Veys carried out construction of houses "from the wheels." In this way the program of housing construction in the small town alongside the right-of-way was fully completed; the railroad workers and operational personnel obtained about 12,000 square meters of comfortable and attractive housing.

The Zolotoy klyuchik Kindergarten with 160 vacancies has opened its doors for tiny tots. The new railroad station-building has accepted its first passengers. Up-to-date settlements have grown up along the right-of-way over the entire Urgal--Postyshevo section.

A special place has been devoted to environmental protection. Nature on the BAM is easily damaged, and, therefore, limits are being observed on the allowable effects of human actions on the surrounding lands to be preserved. Provisions have been made for the meticulous purification of waste waters before they are drained into the rivers, including biological detoxification. A circulating type of water supply has been introduced at the production enterprises, as well as the purification of the gaseous waste products from the boiler units.

The putting into permanent operation of the new railroad segment of the Eastern shoulder of the BAM will speed up the development of the economy of the Komsomol'sk and Urgal TPK's /territorial-production complexes/, where new coal pits are being constructed, along with metallurgical enterprises and les-promkhozes.

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## RAIL SYSTEMS

### QUALITY OF DOMESTIC CONTAINERS, SHIPPING PROCEDURES FAULTED

Moscow GUDOK in Russian 24 Mar 83 p 2

[Article by N. Chernov, acceptance inspector, Riga-Tovarnaya : "Vulnerable Points--Inspection of Container Shipments"]

[Text] There is not a single duty shift when one of the arriving containers does not bring an unpleasant surprise. Sometimes the door is open, sometimes the floor boards are falling out, sometimes there is no seal, sometimes the marking on it is unclear, at times you cannot read the number....

Why does this kind of thing happen? It seems to me that the main reason lies in the fact that containers manufactured by our industry are not noted for strength or reliability in use. The most vulnerable points are the floor covering, the door and the entire door locking assembly.

The Kiev plant produces 5-ton containers with unreliable clamp locks. In Alatyry they make metal containers; what could seem to be stronger? But they are literally falling apart at all of the welded seams, and the floor covering falls out along with the load. The clearances between the door aperture frame and the door itself are great. The bolt lock is placed only on the right door. As a result, such containers frequently arrive with the seal intact but...with an open door.

The second reason is the unsatisfactory technical condition of the containers. Many of them are in use although their time for repair is long past due. And often the locks on those which have been repaired don't work. To be more precise, they have long since worn out, but on one thought to replace them.

And the last reason is damage to the containers during shipping. Most often they are now conveyed in so-called "sundry" railroad cars which among ourselves we call "ribs." These are former gondola cars reoutfitted for shipping containers. The entire reoutfitting process consisted of first removing all of the surviving lining plates from the rolling, then the doors at the ends, in place of which two short little posts were welded at each end for a safety enclosure. They didn't worry about removing the bolts of all descriptions, the door hooks and other parts. And thus they protrude to the inside. As a result, containers must be not so much unloaded from such cars as pulled from them, with all of the resultant consequences.

It is understandable that I am not a specialist in container design, but I work with them every day. And I wish to give some opinions for improving their design. First of all, a reliable lock which will survive dynamic forces is required. Niches are needed on the doors of all containers to such a depth that the lock handle, locking container handle and seal fit completely into this niche. This will provide for their better preservation. It is not a bad idea to make all exterior container surfaces smooth so that it does not get caught on anything. And put all of the cross beams, diagonal struts and other projecting components which add rigidity inside the container.

It is also very important to establish some order in the numeration. It is possible to encounter containers with two different numbers, and it is possible to find them without a single number or with the number half worn off. As a rule, crane operators now work without sling handlers, and there is often no number on the container tops, and if there is one, it is written so small that there is no way the crane operator can make it out (even more so with nine-digit numbers).

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## RAIL SYSTEMS

### MORE EFFECTIVE USE OF CONTAINERS URGED

Moscow PRAVDA in Russian 4 Apr 83 p 2

[Article by O. Serebryakov, deputy head of the North Caucasus Railroad, candidate of technical sciences, Rostov-on-Don: "Container en route"]

[Text] What is the most ruinous link when transporting freight? Economists have long noted that it is the ancillary operations. About half of all expenses go for them. This includes one-third for handling operations. And now we have containers. Everyone has evaluated them on their merits. Containers have permitted the transport process to be maximally mechanized. Transport costs have been reduced. Thousands of working hands have been released.

And isn't a savings in transport packaging essential? For many cargoes placed in the containers, there is no longer any need for packaging. For others, a lighter, inexpensive packaging is used. Lumber, metal and cloth are being saved. In just this regard, each ton of cargo "saves" materials in the amount of R20-25, more than R 1 billion annually on the national economic scale.

It is in order that the 26th CPSU Party Congress noted the necessity of increasing freight shipments in containers. Shipments using containers will increase more than anywhere else (by almost a factor of 2) on railroads. Such a promise has been completely achieved technically. If, for example, in 1980 industry produced 44,000 medium, 5-ton containers and only 3,000 20-ton (and this was inadequate to even replace those which were damaged), during the current five-year plan, transport should get more than 1 million universal and special containers. Of these, more than 150,000 are large-capacity containers.

In a word, an adequately efficient plan for development of the container transport system (CTS) has been planned. And much has already been done in this direction. However, it must conclusively be said that organizational miscalculations sometimes reduce the effectiveness of container shipments to nil.

Here is the first unresolved question: Who is the owner of the containers? The main part of them belongs to the Ministry of Railroads, but river transport workers, sailors, truckers and industrial enterprises have quite a few of them. This equipment is variously used. For example, after conclusion of the navigation period, containers assigned to river transport stand idle. As is known, container yards working around the clock have been set up at railroad stations. Our partners (sailors and river transport workers) also have such yards. In recent years they are also being intensely established by truckers. Why? So that inspection and receipt of cargo may be done at "ones own" yard and not in "someone elses." Inspection doubles the number of times each container must be lifted: it is removed, delivered to "someone elses" yard and inspected. Then it is again placed on the truck to be brought back to "ones own" yard and removed there.

Increasing the number of storage terminals also increases the number of documents when making up a load. The personnel of those organizations which make them up is inflated. It is possible to illustrate this with examples from Rostov Oblast, a large container "handler." In mid-1980, expedition of containers at the Rostov railroad terminal was handed over to truckers. The intentions were good. The truckers perform the initial and final operations in the transport cycle. Who, if not they, should hold all of the strings in their hands? And, as they say, confusion emerged. The exploitation of the container fleet during this period grew sharply worse. Thus, last year idle time came out to be several times the norm. It makes no difference that they removed 77,000 containers from circulation.

Who gains from the fact that Rostov-Tovarnaya exacted more than R 1.5 million from the truckers in the form of a penalty for excessive idle time and in payment for keeping cargo in the containers beyond the normal deadlines. By the way, it would have been more precise to pose a different question: Who is the loser? The truckers? No, they delivered the designated amount to the account of cargo consigners and consignees. It must then be the enterprises, the owners of the cargo? And even this isn't exactly accurate. In fact, transport costs, as distinct from expenses for, let us say, water from the water supply system or electric power, are not limited. Thus the cargo owners shift these increased expenses to the product's production costs and the matter is done with.

As concerns us, the railroad workers, during normal operation and effective container turn-around, the railroad's income and profit would be much greater than the sum of the fines which we received. Moreover, similar penalties may not be used for anything on the railroads other than transfer to the budget, for increasing the working capital. That is, the penalty sums have no way of showing up on the railroads' revenues. Thus both the railroad workers and the cargo owners are the losers, and, most importantly here, the whole national economy suffers a loss.

Even given the ideal work of the truckers who are expediting the freight, economic losses are unavoidable. It is easy to assure oneself of this, if only having become familiar with the labor costs based on the old and the new

service alternatives. With the railroad workers, a total of 58,000 persons were engaged at the Rostov terminal in expedition services. Having transferred the basic functions to the trucking association, we could only eliminate 18 persons, because many types of work are duplicated and new accounting forms and new documents appeared. Having taken on the expediting, "Sevkavtrans" confirmed a personnel schedule of 234 new workers with an annual wage fund of almost R 1.5 million.

Moreover, the truckers are in no hurry to transfer the cargo into trucks. The reason is simple; they have no responsibility for rail car idle time. It essentially makes no difference to them, for example, how much energy costs are required for handling operations or how to effect a savings here. Last year the Rostov mechanized track section overconsumed electric power by more than 28,000 kilowatt-hours just due to the fact they didn't unload the railroad cars directly into trucks. First of all they unloaded into the freight yard, to inspect it, make up the shipments, etc. Naturally, the station's electric gantry cranes played a bigger part in this affair. They "ate up" enough electric power on this account that if one were able to conserve it, it would be possible to work each 20th day during an entire year on this amount.

Similar lacks of coordination beat painfully down on the cargo owners. Each of them now has to do business with two carriers. Here is the opinion of specialists from the "Rostel'mash": "After shifting expedition to the truckers, the plant is incurring additional transportation expenses of up to R60,000 per year. The accounting system has become sharply more complex. This unnecessary intermediate link must be done away with." The Rostov center "Rostkul'ttorg" says: "The restructuring was unjustified. It is difficult to establish who is guilty when there are no containers."

As we see, the existing scheme for container use is far from perfect. All interested parties are in agreement with this fact. It is just the republic's Minavtotrass [Ministry of Motor Transport] who holds its ground.

According to orders from the Minister of Railroads, the Rostov-Tovarnaya station should soon switch to an automated container shipment control system ("ASU-container"), but the system by itself may turn out to be of little effectiveness without direct and constant ties with the clients.

Much attention is now being devoted to rail transport. Significant resources are being released for its development. Just in recent times within the Rostov terminal, more than R 4 million have been spent on the construction and renovation of freight yards, container yards and their re-equipping. However the work indicators do not improve. As a counter to this, there is another example. In Krasnodar expeditionary service remained assigned to the railroads and, as a result, rail car and container idle time is being reduced from year to year and shipment volumes are growing.

Recently a new main administration of container and package shipments and mechanization of handling operations was organized as a part of the Ministry

of Railroads. The main administration has its sub-units locally railroad administration services and divisions within departments. One cannot as yet say that everything is good there. The efficiency of the new sub-unit's work will doubtless depend on the precise and complete determination of its functions and its sphere of obligations. There is probably sense in thinking, should not the entire container fleet and all economic and organizational questions associated with their transferal be shifted to the control of this administration?

In the final analysis, we are speaking of the owner of the containers. The idea is simple, to place in the same hands all of the worries connected with container operation, from the consigner's door to the door of the consignee. This method should be supported by unified transport process technology, a unified organizational structure functioning on the principle of the full responsibility of the carrier before the owner of the cargo and a unified goal, the most rapid and safe delivery of freight with a minimum of transport costs, without supplementary labor resources.

FROM THE EDITOR: The questions concerning development of the container transport system have been discussed in the pages of PRAVDA. Much has changed since that time, but many unresolved problems still remain as before. The fact that the container run time has slowed down substantially is cause for alarm. In 1979, its turn-around time was slightly more than 19 days, whereas in 1982 it has exceeded 23.

What is it that hinders the further increase in container use efficiency? The questions raised in the present article "Container en route" go beyond the interests of a single sector. We would like to know the opinion of both railroad workers and other participants in freight shipment. We invite them to continue the conversation.

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## RAIL SYSTEMS

### ADVANTAGES OF USING MINI-CONTAINERS

Moscow GUDOK in Russian 14 Apr 83 p 2

[Article by O. Serebryakov, deputy head of the railroad and candidate of technical sciences, Rostov-on-Don: "Great Advantages of the Mini-Container"]

[Text] There is no longer any need to convince anyone that it is advantageous to ship cargoes in containers. In particular, the scientists of the VNIIZhT [All-union Order of the Red Banner of Labor Scientific Research Institute of Rail Transport (Central Scientific Research Institute of the Ministry of Railroads)] and RIIZhT [Rostov-on-Don Institute of Rail Transport Engineers] have again demonstrated this fact on the basis of the North Caucasus main line. As the analysis showed, the "Rostel'mash," "Krasnyy Aksay" Plants, the ball bearing plant, the shoe factory imeni Mikoyan, a confectionary factory, a sewing plant and trade and supply centers saved many thousands of rubles annually on such shipments. And it is not surprising. Container shipments open vast possibilities for the mechanization of labor-intensive operations. As a result, for the handling of each 1 million tons of freight, more than 1500 persons are released. Moreover, the delivery speed is increased by 20 percent on the average and safety increases significantly.

Yes, the advantages the network reaps from incorporation of such a progressive means of conveyance are indisputable. However, along with this, we should acknowledge that it is still spreading slowly. And, in my opinion, there are two substantial shortcomings which are causing this. In the first place, we constantly experience an acute shortage of containers, and those which are available do not meet the elementary specifications. Secondly, the smallest container in circulation today, the 3-ton container, in no way suits the consignor or consignee. And it is this point that I wish to address specifically.

Imagine that you have to ship, for example, spare parts for a TV set or bulbs for pocket flashlights.... It will take much time before 3 tons of a product of this type will accumulate. Otherwise it cannot be shipped--the container capacity must be used completely. The same situation also arises when shipping glass, porcelain and crystal articles and other valuable or scarce items....

It is true that the clientele finds a way out of such situations--it agrees to having such cargo being shipped in small packages. But difficulties arise here also: mechanization cannot be widely employed, and during manual cargo handling, as is known, the amount of product damage grows.

It would be possible to increase the mechanized handling of small shipments using packages. It is precisely this approach that has already been making inroads with the clients for 4 years. But such a demand is not being satisfied. As an example, at Rostov-Tovarnyy and Bataysk terminals no more than 5-10 percent of all packages coming in are small packaged shipments. Moreover, a significant part of the packages turns out to be in broken sets since they have been handled several times during the course of their journey. In sum, almost all small shipments at these stations must be loaded and unloaded manually onto and off of palletes, hence the conclusion that unloading them in packages causes our clients further labor and material expenses. Therefore they are frequently forced to ship their product by air or truck over great distances, disregarding the significant transport costs. And it is disadvantageous to the railroad workers themselves to deliver smaller shipments in package form: due to the lack of uniform size of the packages, it is impossible for practical purposes to use efficient loading schemes, and this results in the fact that the carrying capacity and volume of the rolling stock are not being completely exploited.

What can we propose in its place? It comes to mind that more than 20 years ago small containers on casters with a capacity of 1100 kilograms were in great demand among our clients. Thus, at Rostov-Tovarnyy up to 100 of them were dispatched per hour. And the station had practically no claims of shortage or damage of the cargo.

There is now no need to manufacture small containers of the previous design, to waste expensive metal. For example, the casters are no longer necessary--there are enough electric loaders at the majority of the stations. Moreover, cargoes with casters cannot be stored stacked one on top of another, and shipping them by truck is inconvenient. Therefore it is advisable to develop new small container designs with varying capacities of, let's say, 700, 350 and 175 kilograms. They will provide the best way to insure the safety of small shipments and will significantly aid in the reduction of manual labor and nonproductive expenses of packaging and packing. Naturally the commercial work will be simplified also. And this is all in the best interests of the railroad workers and the clients.

Furthermore, it will be possible to bring many containers to enterprise work shops for loading and unloading, as well as to include them directly in the industrial processes. As a result, the necessity for further cargo handling within this or that plant or factory will be eliminated.

In my opinion, such containers should be the property of the MPS [Ministry of Railroads]. Of course, for their use, the clients must pay an appropriate tariff which will go toward the manufacture of new containers and preventive maintenance for those in operation. All of these measures will undoubtedly aid us, the railroad workers, to satisfy the demands of the sectors of the national economy for shipment of the most important cargoes more fully. Realizing them, we will make a genuine contribution to fulfilling the decisions of the 26th Party Congress of the CPSU on accelerating development of the network of the container transport system.



## RAIL SYSTEMS

### DIFFICULTIES PERSIST IN KODAR TUNNEL CONSTRUCTION

Moscow GUDOK in Russian 4 Mar 83 p 1

[Article by I. Matveyev: "Through the Kodar: A Report"]

[Text] One of the "hot points" of the BAM is, without doubt, the Kodar Tunnel. It is precisely this which must become in the not-too-distant future the "key" to opening up operational traffic on the entire BAM.

As of today almost 300 meters of the corridor have been excavated. That may not seem like much if, of course, we leave out of consideration the characteristics of cutting through this last BAM tunnel. No matter what they thought up or what they figured out, when December arrived it became clear to everybody that the planned 150 meters would not be overcome by the beginning of 1983.

As of 10 December only 85 meters had been traversed. And although the rock-cutting cycle--drilling, clearing away and dumping, as well as bracing in the roof supports--was compressed into a 24-hour period, nevertheless, during the 20 remaining days no more than 50 meters were traversed. And so it turned out that since September only 135 meters had been overcome. What can one say, the pace of a tortoise. All operations were slowed down by the freezes, which intensified. The rock-cutting unit, designed for temperatures above freezing, operated only thanks to the enthusiasm of the brigade. During a 24-hour period they hardly managed to achieve their norm, although it was supposed to be fulfilled within a 17-hour period.

"Talk about a norm!" grumbled brigade-leader Gennadiy Kuznetsov. "If there were heat at the cutting-face, we would manage it. Bardachenko's brigade in the Baykal Tunnel managed to do 135 meters in a month. An All-Union record! And we were not exactly in last place there either. O.K. If there is heat at the cutting-face, then we'll see."

On 20 December Gennadiy stood in front of the portal and observed how in the depths of the tunnel the flaps of the just-now installed gates folded together, and satisfaction and annoyance filled his soul simultaneously. The satisfaction was understandable. At last we will have some heat.... And the annoyance, probably because it was somewhat late.

They overcame 140. This was 10 meters more than they had proposed at the beginning of December. Now heat and hot water were being supplied for the tunnel. A new stage in the struggle had begun.

The Kodar is still experiencing a shortage of building materials and equipment: these must be delivered over a distance of many hundreds of kilometers. Nevertheless, the industrial base is being built at an accelerated pace. Work is being finished up on the building of the concrete plant, furnishing the capacities for fuel and cement; the boiler and ventilation combines have been put into operation. And all of this is for the purpose of the cutting operation. It is the crown of the efforts of hundreds of people. And the fact that its pace during December was not so great may be explained very simply. If at the Baykal Tunnel preliminary operations were conducted for two years prior to the beginning of the initial cutting, at the Kodar Tunnel the cutting operation began within eight months after the first group of workers arrived on the site. If it lasted four months there, here it has been only two months.

G. Kuznetsov's brigade is still young. The brigade-leader himself is a miner by heritage. He was lured away from coal by the Nurekskaya GES, where he built tens of custom-made water drains in the rocks. When he had finished the principal cutting operations, he transferred to the BAM. In 1978 he began working on the Baykal Tunnel in the brigade of Hero of Socialist Labor Valentin Tolstoukhov, in which he soon became a unit-leader. Within four years he was put in charge of a brigade. And here on the horizon the Kodar "appeared." Naturally all four cutting brigades were burning with one desire--to begin the new tunnel. But only one was necessary--the best one. Therefore, in Tunnel Detachment No 12 a competition was proclaimed for the right to carry out the first cut at the Kodar.

Despite its youth, G. Kuznetsov's brigade demonstrated by its skill and highly productive work that it would be able under very severe climatic and geological conditions to perform the cutting in the new tunnel within the shortest possible time period. And, nevertheless, this group is essentially still in the stage of emergence. Of the 30 persons in it now, half are novices.

And one must think that even the novices at the beginning of their careers were lucky. They will be working with such renowned masters as Arkadiy Dvorskiy, an extremely experienced drifter, a veteran of the Severomuyskiy Tunnel, Petr Antoniva, a former Kharkov bridge-builder, Boris Strekalov, a master mechanic, who devoted considerable effort and skill to repairing a rock-cutting unit which was far from being new, Pavel Volik, also a Donbass miner, who devoted ten years to the Nurekskaya GES and four years to the Baykal Tunnel.

Today it can be boldly stated that the first, most difficult phase of operations on the Kodar Tunnel have been completed. Now that heat has arrived at the cutting-face, a second, no less important phase has begun--reducing the time-periods required for cutting.

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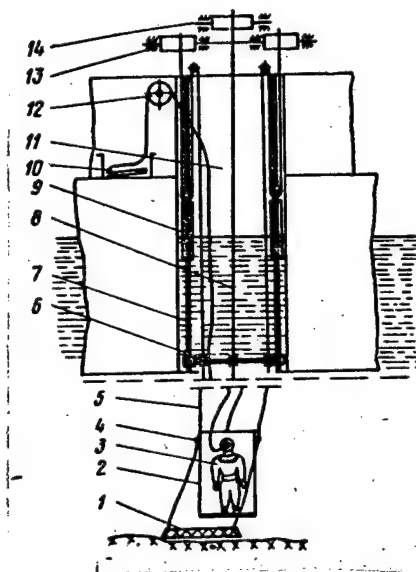
## MARITIME AND RIVER FLEETS

### NEW DEVICE FACILITATES UNDERWATER CONSTRUCTION, REPAIR WORK

Moscow RECHNOY TRANSPORT in Russian No 3, Mar 83 p 27

[Article: "Apparatus for Underwater Operations"]

[Text] Our country's industry has developed a lowering and hoisting apparatus which allows us to perform hydraulic-engineering, underwater ships', emergency-rescue, ship-building and ships'-repair, as well as transshipment operations in ports and in the open sea, on inland bodies of water, and rivers (see figure).



It consists of the following: a bell (2), placed within a shaft (11); attached to the bell is a hoisting cable (8), leading down from a winch drum (14). The bell descends along flexible guide controls (5), connected with the anchor assembly (1) and the winch (13). The flexible guide controls pass through a centering crossbar (6), which is situated between rigid guide controls (7). The bell interacts with the flexible guide controls by means of lugs (4), while the tension of these guide controls is ensured by counterweights (9). The diver (3) is connected with the ship by an air-hose with a telephone cable (12), which is stored in a crib (10) and is let down by means of a guide pulley.

At first the anchor assembly is lowered to the bottom. After this the diver can enter the bell and, by using the flexible guide controls, descend to the precisely assigned place regardless of the water current. With the aid of such a system any instrument and even a television camera can be lowered down to the diver.

The advantage of this lowering and hoisting apparatus consists in the fact that it allows the diver to perform hydraulic-engineering and emergency-rescue operations with a turbulence in the surrounding water of 4 points instead of 2 points, as was the case with the old method (lowering the diver over the side).

This apparatus has been put into production.

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## MARITIME AND RIVER FLEETS

### CHARTER OF NEW 'MORKONTEYNER' ALL-UNION ASSOCIATION

Moscow MORSKOY FLOT in Russian No 3, Mar 83 p 78

[Charter of 'Morkonteyner' All-Union Association]

[Text] I. GENERAL PROVISIONS

1. V/O Morkonteyner [All-Union Sea-Container Association] has been established to organize liner and container cargo shipments of Soviet and foreign charterers, to track the movement of containers and container equipment and organize their overhaul by and leasing from foreign companies, and also to perform brokering, leasing and other commercial operations associated with liner and container shipments on behalf of Soviet and foreign organizations.
2. V/O Morkonteyner is an economic organization operating on the basis of economic accounting, has its own budget, is a legal entity and operates on the basis of the present Charter. For the performance of operations associated with liner and container shipments, V/O Morkonteyner receives commissions, the amount of which is determined in accordance with established procedures.
3. V/O Morkonteyner is liable only to the extent of that property belonging to it, against which suit can be initiated in accordance with the laws of the USSR. V/O Morkonteyner is not liable for obligations of the government and other Soviet organizations, enterprises and establishments; and the government and other Soviet organizations, enterprises and establishments are not liable for the obligations of V/O Morkonteyner.
4. V/O Morkonteyner is situated in Moscow.
5. V/O Morkonteyner has a circular seal with its name shown thereon.

#### II. FUNCTIONS

6. For the performance of the tasks assigned to it V/O Morkonteyner:
  - a) organizes liner and container cargo shipments on behalf of Soviet and foreign shippers and consignees using Soviet and foreign vessels,

including cargo forwarding services utilizing the "door-to-door cargo delivery system;

- b) organizes the carriage of transit containers on the ocean segment of the route;
- c) organizes tracking of the movement and exchange of containers and container equipment, monitoring of the overhaul of containers in the USSR and abroad, and coordinates this work with the relevant organizations and enterprises in the USSR;
- d) satisfies the requirements of the shipping lines with regard to containers, dollies and trailers through interchange between the shipping companies and the other transport departments of the USSR, and also through long-term and short-term leases from foreign firms;
- e) as the line agent of the shipping companies coordinates the operation of Soviet liners operating on combined and international routes in the carriage of foreign-trade cargos and cargos of foreign shippers and consignees;
- f) concludes in the name of and on the behalf of the shipping companies and other Soviet organizations agreements with foreign firms for agency activities, stevedoring and other servicing of Soviet line vessels in foreign ports;
- g) determines the status of the scheduled charter market and the transport services market;
- h) participates together with other Soviet organizations in coordination of shipments of foreign-trade and transit cargos in containers.

### III. RIGHTS OF V/O MORKONTEYNER

7. For realization of the functions noted in Article 6 of the present Charter, V.O Morkonteyner has the right to perform the following operations in the legally established manner:

- a) execute transactions of all sorts and other legal actions, including the signing of contracts; carry out credit and exchange operations with establishments, enterprises, organizations, firms and physical persons in the USSR and abroad; and sue and be sued in court and arbitration;
- b) establish its offices, branches, representatives, commercial societies and agencies, both in the USSR and abroad;
- c) participate in all sorts of industrial combines, associations, conferences, societies and organizations conforming with the objectives of the Association, operating both in the USSR and abroad.

#### IV. CAPITAL

8. The authorized capital of V/O Morkonteyner is 1,000,000 (one million) rubles.

#### V. ASSOCIATION MANAGEMENT

9. Management of V/O Morkonteyner is exercised by the Association Chairman and his deputies, appointed in accordance with the established procedure. The distribution of responsibilities between the chairman and his deputies is made by the chairman of V/O Morkonteyner.

10. The chairman of Morkonteyner manages all the affairs and property of the Association; performs in the name of the Association all the functions assigned to V/O Morkonteyner; carries out the necessary agreements actions and operations; and deals directly with all the enterprises, organizations, establishments, firms and individuals.

11. The foreign-trade agreements made by V/O Morkonteyner must be signed by two individuals. The chairman of the Association and his deputies, and also individuals authorized by powers of attorney signed by the chairman of V/O Morkonteyner have the right to sign such agreements. Promissory notes and other financial obligations relating to foreign-trade operations issued by V/O Morkonteyner must be signed by two individuals--the chairman of the Association or his deputy and the senior accountant of the Association. These promissory notes and other financial obligations may also be signed by two individuals who are authorized by powers of attorney signed by the chairman and senior accountant of V/O Morkonteyner.

#### VI. ACCOUNTABILITY AND PROFIT DISTRIBUTION

12. The V/O Morkonteyner operating year runs from 1 Jan to 31 Dec of the calendar year.

13. The reports and balance sheets of V/O Morkonteyner are prepared and approved in the manner established by law.

14. The profit of V/O Morkonteyner is distributed in the manner established by law.

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## MARITIME AND RIVER FLEETS

### NEW TYPE NUCLEAR-POWERED ICEBREAKER FOR SEA, RIVER USE

Moscow TRUD in Russian 25 Feb 83 p 4

[Article by V. Kupelin: "Atomic Icebreaker for the Yenisey"]

[Text] Soviet and Finnish shipbuilders are developing a joint design for a nuclear icebreaker. At the USSR Ministry of the Maritime Fleet it was described to a TRUD correspondent.

At the staff office for maritime operations on Dikson Island a large map of the Arctic is hanging on the wall. The northern seas are marked with flags naming the icebreakers--"Leonid Brezhnev", "Siber". Freighters stretch out behind them. Caravans of little flags are moving along the Northern Sea Route, heading towards Murmansk, while many ships, passing Dikson, enter the Yenisey Gulf. This gulf is the mouth of a great Siberian river. For a large part of the year it is covered with a thick layer of solid ice. The little flag marking the "Siber" moves rapidly across the map. However, outside of the gulf it stops and turns around as if encountering an invisible obstacle. The heavy nuclear icebreaker cannot operate in shallow waters. The baton is passed the diesel icebreakers--"Kapitan Sorokin" and "Kapitan Dranitsyn" and they lead the convoy to the port of Dudinka. However, they have their shortcomings, comparatively low power. When the cold sets in it is difficult for them to break through to Dudinka.

The Yenisey is a major transport artery. It is literally pulsating as freighters move up and down it. The products of the Norilsk Mining Metallurgical Combine, lumber, and thousands of tons of other kinds of freight are dispatched by water routes. However, up until the 1970's the navigation season on the Yenisey was only six months long. Now the two "captains" lead convoys to Dudinka almost year round. However, the duration of autonomous navigation for them is still not long. In order to be serviced it is sometimes necessary to make several kilometer long trips empty. Scarce fuel is spent unproductively.

The new nuclear icebreaker is intended for work at the mouth of the Yenisey and on the open sea. It will be as general purpose and as powerful as other nuclear ships, and as shallow drafted as a diesel. It will not fear the shallow depths of the Yenisey. There are practically no restrictions on its duration of navigation. It can lead dry cargo



freighters into Dudinka at any time, and maintain continuous navigation in the most severe winter.

The dimensions of the new nuclear ship are similar to those of the "Lenin", the first ship in our nuclear fleet. The rest of its features will be substantially different. The pilot house will be higher and moved forward, toward the bow. This will improve the navigators' vision, which is very important for navigational safety. Its draft will be much shallower. The nuclear power plant for the icebreaker is being built in our nation.

The icebreaker's construction is planned for the 12th Five-Year Plan. Discussions on this are underway with Wartsila, the Finnish shipbuilders who have been our longtime and reliable partners. For example, they built the diesel icebreakers the "Kapitan Sorokin", "Kapitan Nikolayev", and "Kapitan Dranitsyn". Contract technical documentation is now being prepared. Tentatively, the future icebreaker will be given the name of the peninsula near which the Yenisey flows--"Taymyr".

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## MARITIME AND RIVER FLEETS

### SUCCESSFUL USE OF DIESEL FUEL-WATER MIXTURE IN SHIP ENGINE

Vilnius SOVETSKAYA LITVA in Russian 23 Mar 83 p 4

[Article by A. Pipiras: "Diesel Works on Water"]

[Text] What is the effect of a spoonful of water in a barrel of fuel? Just a comparatively small amount of water entering the fuel system can put a tractor, motor vehicle, locomotive, ship and even an electric power station out of order. Therefore operators and mechanics have long vigilantly seen that fuel-water mixture did not enter engines.

Lithuanian ocean shipping sailors and specialists have reconciled the two eternal "enemies". They have learned how to mix fuel and water, making it possible for this mixture to supply ship main engines.

The innovation's practical introduction was on the motor ship "Marat Kozlov." A creative group of innovators, under the leadership of Yuriy Vorzhev, chief of the department of shipping operation diesel technology and candidate of technical sciences, has designed, built and tested a special device which under high pressure introduces a fuel and water mixture into the fuel lines, maintaining the viscosity, fluidity, and other very important properties characteristic of the fuel. When well mixed with the fuel, the water molecules are covered by a layer of it. When such a drop enters a high temperature zone, the water within the fuel film is the first to evaporate. Upon evaporation the fuel is dissipated into small particles, improving the combustion process. This reduces engine pollution and the amount of harmful exhaust gases, increases electric power station service life and saves considerable fuel.

Repeated testing of the new fuel treatment system has shown that adding one-third water to diesel fuel makes it possible for a ship to travel greater distances and at higher speeds.

In the immediate future this fuel and water mixture will be used on other commercial ships.

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## MARITIME AND RIVER FLEETS

### NEW, MORE POWERFUL ENGINES FOR SOVIET HYDROFOILS

Moscow VODNYY TRANSPORT in Russian 9 Apr 83 p 4

[Article by R. Borisov: "For Flying Ships"]

[Text] The swift run across the waves made by "Komet" and "Meteor" type hydrofoil ships will become even faster with the installation of new diesel engines made by the Zvezda Production Association in Leningrad."

Without increases in weight and size, the power of the new engines has increased 10 percent and is 1,100 horsepower. The service life of the new models has increased from 3,500 hours to 5,000 hours. Fuel consumption has declined; during a navigational season each diesel consumes 10 tons less fuel than its predecessor.

B. P. Baykov, chief designer at the association, stated: "The mastery of the new model required almost no production restructuring. The enterprise's high degree of standardization of parts and assemblies for all powerful engines permits the series introduction of the new models within very short time spans."

The new engine has been successfully tested not only on rivers and seas of the USSR, but also on the Mediterranean Sea.

The outstanding features of the new engine are so obvious that the state certification commission has awarded it the Mark of Quality prior to the beginning of series production. The rapid development of the new model was assisted by its "examiners", crews of the Yalta Maritime Fleet, who gave the designers several valuable suggestions. The massive replacement of engines on operating hydrofoils and their installation in new ships begins this year.

Engines for high speed ships of the new generation have even more advanced features. Engines with 1,350 hp are planned for Al'batros ocean going hydrofoils and Lastochka river hydrofoils, the production of which is being mastered by the nation's shipbuilders.

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## FISHING FLEET DEVELOPMENT

### FISHING MINISTRY OFFICIAL REVIEWS THIRD LAW OF THE SEA CONFERENCE

Moscow RYBNOYE KHOZYAYSTVO in Russian No5, May 83 pp 49-54

[Article by V. I. Ikyryannikov of the Ministry of the Fishing Industry USSR: "The Results of the Third UN Conference on the Law of the Sea" under the heading: "Questions of Maritime Rights and Practice"]

[Text] The Third UN Conference on the Law of the Sea, the first session of which took place in December 1973 in accordance with a 17 December 1970 resolution of the UN General Assembly, has completed its work.

From the 6th to the 10th of December 1982 in the city of Montego Bay (Jamaica) in the concluding part of the 11th session of the conference, the final document of the UN Convention on the Law of the Sea was signed and opened for subscription. The Convention will be opened for subscription for two years. On the first day, December 10th 1982, the signatures of 119 countries were affixed to the document. These included Namibia as represented by the UN Council on Namibia. Among the countries refusing to sign the Convention were the U.S.A., Israel, Turkey, Venezuela, Argentina, Peru, Ecuador, England, FRG, Belgium, and several others. A number of countries (Japan, Spain, and others) had not been able by that time to complete consideration and study of the Convention.

The results of the concluding session at Montego Bay confirmed for once and for all the success of the conference which had taken shape on April 30th 1982 at the first part of the 11th session when, as result of a vote conducted at the request of the U.S.A., 130 countries declared for adoption of the Convention, 17 abstained, and only four countries - the U.S.A., Israel, Turkey and Venezuela voted against it (Ecuador and Albania did not participate).

The success was especially portentous because during all the work of the conference representatives of a number of countries repeatedly had undertaken to prevent the achievement of compromise solutions on the important problem of an international law of the sea. These efforts were especially intensified after January 29th 1981 when the president of the U.S.A. declared that the Convention, as developed, was unacceptable and demanded reconsideration of a number of its fundamentally important provisions which had been worked out earlier with the active participation of the U.S.A..

The U.S.A. position which, in the final analysis, was directed at undermining the work of the conference, met with decisive rejection by the socialist and developing countries. The demands of the U.S.A. to change key provisions of the Convention to oblige its monopoly for the development of the mineral resources of the sea bottom did not have the support of many of the allies of the U.S.A.; namely, France, Holland, Denmark, Canada, Ireland, Australia, New Zealand, and others who signed the Convention despite the pressure brought to bear on them.

The representatives of 120 countries spoke in the final discussions at Montego Bay. The majority of them were cool toward the U.S. position.

The U.S. representative, compelled to take a positive stance on many of the provisions of the Convention, primarily those related to shipping and the utilization of resources within the limits of national jurisdictions, let it be understood that his country, in repudiating the Convention, intended to use from it only those provisions which satisfy its interests. That approach aroused censure in the addresses of many speakers. A representative at the conference, T. Ko (of Singapore) noted that: "the Convention, although it consists of a series of compromises, is a unified whole and a state cannot select what pleases it and reject what does not. In international law, as in domestic law, rights and obligations are interconnected and therefore it is juridically impermissible to demand rights according to the Convention and not be prepared to accept the corresponding obligations."

Thus was concluded a most complicated multiyear process of discussions on the development of an all-embracing universal Convention on practically all the most important aspects of the use of the seas and oceans. It had begun with the discussion at the UN in 1967 of the proposal by Malta: "About the preservation, exclusively for peaceful purposes, of the bottom of the seas and oceans and its mineral resources in the open sea beyond the limits of national jurisdictions, and also about the uses of its resources in the interests of mankind."

The new Convention contains legal principles and standards relating to the status of sea spaces and the activities of states using these spaces and their resources both animate and inanimate.

Many of the principles and standards were incorporated in the Convention from existing maritime law, primarily from the Geneva Conventions on the Law of the Sea of April 29th 1958, in relation to which the new Convention will have preferential force. The Convention includes new provisions which reflect the modern stage of development of the world economy and international relations (the status of the sea bottom, exclusive economic zones, the settlement of disputes, and others) and also provisions which "close" gaps in existing international law (the width of territorial waters and the outer limits of a continental shelf). Standards and principles relating to the conduct of scientific research in the sea and the protection of the marine environment from pollution are codified on a universal basis.

For the first time in the whole history of the codification and development of international law, a standard on the 12-mile limit of territorial waters was successfully developed and included in the Convention. Also new is a provision allowing states to use either of two methods alternately in reporting the width of territorial waters: namely, from the line of greatest low tide, or from straight coastal reference lines. Relative to the peaceful passage of foreign ships, the new Convention gives a more detailed list of activities, including fishing activity, the performance of which is a basis for a coastal state to forbid such passage.

Henceforth, the width of the contiguous zone in which a coastal state exercises customs, fiscal, immigration, and sanitary control cannot exceed 24 nautical miles counting from the reference lines from which the width of territorial water is measured instead of the 12 miles specified by the Geneva Convention of 1958.

Provisions about the status of straits used for international shipping are a separate part of the Convention. Establishing for such straits as are overlapped by the territorial waters of coastal states a policy of unhindered passage in transit for foreign ships and aircraft, the Convention acknowledges the right of these states to adopt laws and regulations relative to passage in transit concerning the safety of navigation, protection of the sea from pollution, the banning of fishing including requirements relative to the stowage of fishing gear on ships in passage, and the observance of customs, immigration, and public health laws and regulations.

The provisions about archipelagic states which consist entirely of one or of several archipelagoes are new in principle. To these states is granted the right, in determining their territorial waters, to draw straight reference lines through the extreme points protruding into the sea of the most remote islands and reefs uncovered at low tide along the perimeter of the archipelago.

In the water space inside the perimeter, called archipelagic waters, the policy on the passage of foreign ships is established on the basis of the right of peaceful passage established for territorial waters. Rights for fishing in archipelagic waters will be recognized only for traditional fishing and only for neighboring states.

The Convention's provisions about the legal status of the economic zone which embodies the sea region beyond the limits of territorial waters and is contiguous to them, are important.

In this zone, with a width of 200 nautical miles counted out from the reference lines from which territorial waters are measured, a coastal state has sovereign rights for the purpose of exploration, development, conservation and control of both animate and inanimate natural resources, and also in relation to other kinds of economic activity. In addition, coastal states have jurisdiction relative to the creation of artificial islands, structures, and installations, marine scientific research, and the protection and conservation of the marine environment.

The Convention regulates in detail the implementation by a coastal state of the above rights and the fulfillment of its obligations, directing it at the same time to observe the rights and responsibilities of other states.

The principal attention in this was given to the utilization of living resources. This is evidence that fishing policy constitutes the key question in the complex of problems, to the solution of which, the idea of creating economic zones was directed.

Relative to the living resources in an economic zone, an important provision of the Convention is the obligation of a coastal state, along with the conservation of these resources, to provide for their optimum usage. So also is the provision following from that about the obligation to allow foreign fishermen into the zone to fish for the remainder of the allowable catch. In so doing, those countries, with the exception of developing countries and countries in an unfavorable geographic position, should be given priority who traditionally have fished in this zone or have undertaken important efforts in the investigation and identification of fish stocks.

Special provisions are devoted to some very important species of living resources; namely, those that migrate great distances (mainly tunafish and marine mammals), anadromous (salmon and others), and catadromous species (eels).

In relation to species that migrate great distances, the principle is secured of the cooperation of a coastal state with states catching these species in the whole region of the fishery including the economic zone. In addition, the creation where necessary is specified of international organizations for the purpose of conserving these species and for assisting in the optimization of their utilization.

A special legal status was developed for anadromous fish (salmon). It is specified that states in whose rivers the stocks of these fish are reproduced have the right to establish measures for regulating fishing for them not only in their own economic zone but beyond its limits. Also, foreign ships have the right to fish for them beyond the zone only on the basis of agreement with the state of origin and taking into account both the condition of the stocks of them and the need for them in the state of origin. In this, preference will be given to those states who, on the basis of agreement with the state of origin, participate in the reproduction of anadromous fish especially by taking onto themselves part of the expenses for this purpose.

To coastal states, in whose waters catadromous fish (eels) lead the principal part of their lives, is entrusted the responsibility for control of the stocks of them, and the Convention does not allow them to be taken in the open sea.

The Convention gives to a coastal state the right, in its own economic zone, to take such measures (including surveillance, inspection, arrest and trial) as appear necessary to keep its laws and regulations as adopted in accordance with the Convention. Imprisonment, however, is not allowed if there is no reciprocal agreement with the appropriate state. An arrested ship and its crew must be released promptly after payment of a bond or other guarantee.

As regards "sitting" species of living resources, the provisions of the Convention relative to economic zones do not extend to them. Their utilization is regulated by the provisions about the continental shelf.

Together with the above enumerated rights of a coastal state in the economic zone, the most important freedoms of the sea are preserved; namely, freedom of shipping and flight and freedom to lay underwater cables and pipelines. Other traditional rights of friendly states in the utilization of the open sea are confirmed.

Although, as a whole, the provisions of the Geneva Convention of 1958 defining the nature of the rights of coastal states on the continental shelf are included in the new Convention (the implementation of sovereign rights over the shelf for the purpose of exploring and developing its natural resources), in other respects the legal status of a shelf is radically revised.

Thus the new definition of a continental shelf identifies it as the underwater edge of a continent which consists of the shelf proper and also the slope or gradient of the continental massif. Clear-cut criteria for the outer boundaries of such a shelf are established; namely, it must not exceed a distance of 350 nautical miles from the reference lines used to measure the width of territorial waters or a distance of 100 nautical miles from the 2500-meter isobath. In a case where the width to the edge of the continental shelf is less than 200 miles, its outer boundary coincides with the outer boundary of the economic zone.

Data on the boundaries of the shelf when its width exceeds 200 miles is being presented by the states to a commission created within the UN which will, in accordance with the request of coastal states, give them recommendations about the establishment of the outer boundaries of their shelf. Such boundaries are final and obligatory for all states.

A coastal state should make allotments or payments in kind from the receipts from the development of the mineral resources on the shelf beyond the limit of its economic zone. These allotments should be on the order of 7 percent of the value of the products obtained. These allotments will be distributed among the states on a just basis and with regard for the interests and needs of developing countries.

With regard to the legal status of the open sea beyond the limits of the economic zones, with the exception of the fishing questions, the new Convention, basically, reproduces the provisions of the 1958 Geneva Convention and adds to them a number of new standards.

For instance, illegal commerce in narcotics at sea is forbidden, and radio broadcasting from the open sea is not sanctioned. In the latter case, perpetrators may be brought to trial by the state to which the radio broadcast is directed or whose radio communications are interfered with. In addition, the responsibility of a state to implement its jurisdiction and control over ships navigating under its flag is set forth more broadly and in greater detail.



To the list of freedoms which includes the freedom of the open sea, the Convention adds the freedom to erect artificial islands and freedom for scientific research which had not been included in conventions before this. These freedoms, however, and also the freedom to lay underwater cables and pipelines and freedom of fishing must be carried out in observance of the conditions contained in the other parts of the Convention. Especially expanded is the list of conditions concerning the freedom of fishing. They are directed toward increasing effective collaboration of the states in the business of conserving and utilizing the living resources in the open sea. The majority of these conditions are new compared with the provisions of the Geneva Convention of 1958 on fishing and the preservation of the living resources in the open sea which, as experience has shown, turned out to be frail.

For instance, it is specified that in the open sea, freedom of fishing must be implemented by the states not only on the basis of their contracts but also with observance of the rights, obligations, and interests of the coastal states as specified in the Convention relative to distantly migrating fish, marine mammals, anadromous, and catadromous fish, and also to the stocks of fish encountered both in an economic zone and in regions of the open sea adjacent to it. In the latter case, a coastal state and a state conducting fishing of such stocks are called upon to collaborate with each other to agree on measures for their conservation.

Establishing the need for states to collaborate on questions of conserving and controlling the living resources in the open sea including, where necessary, the creation of international organizations on fishing, the Convention defines the conditions and requirements for establishing specific measures for their conservation.

For the first time, a very important and more precise definition is made concerning islands; namely, these formations can have territorial waters, an adjacent zone, an economic zone, and a continental shelf. However, around rocks unfit to support human life or unfit for independent economic activity, economic zones and shelves cannot be established.

Special attention is given to collaboration by states washed by enclosed or semienclosed seas. (These include seas communicating with another sea or an ocean through narrow passages which consist wholly or mainly of territorial waters or economic zones). Fields of cooperation including fishing are defined.

The implementation of the right of states not having an egress into a sea to have access to and from it and freedom of transit is regulated in detail.

Provisions about the legal status of the sea bottom beyond the limits of a continental shelf (the international region) and its resources which have been declared the general heritage of mankind, occupy a special place in the Convention.

The rights to the resources of this region belonging to mankind will be implemented on its behalf by an international body concerned with the sea bottom whose creation was provided for at Kingston (Jamaica). The Convention regulates in detail the procedure and conditions for exploration and development of the mineral resources on the sea bottom, the creation of the international body and its enterprises including their organization. It defines policy in relation to activity in the region and determines the distribution of revenues from it with regard in particular for the needs and interests of developing countries.

To questions of the protection of the marine environment from pollution and its preservation, the Convention gives much attention in the development of which the consequences of the "Amoco Cadiz" catastrophe on the coast of France in 1978 had a decided influence.

Coastal states are endowed with broad rights in this field; at the same time, the measures they take must be coordinated with international laws and standards when such measures relate to an economic zone. The Convention defines rather rigid requirements regarding the fulfillment of laws and regulations for protecting and preserving the marine environment by nations of flag registry, by port authorities, and by coastal states.

Punishment for violation of these laws and regulations by foreign ships can include detention of a ship and a money fine. In territorial waters, punishment can be more serious if a premeditated act of polluting is committed.

The legal status of marine scientific research provided for in the Convention includes a number of new elements. If it is in territorial waters the consent of the coastal state, obviously, is required and the coastal state itself establishes the conditions for conducting the research. In relation to an economic zone or a continental shelf, although the consent of a coastal state is required, it is implied, however, that in normal circumstances the consent should be given. If, however, a scientific project has a direct relation to the resources of an economic zone or continental shelf within the 200 mile limit, or if it involves drilling or building artificial islands or structures in these regions or explosive operations, in such cases consent can be denied.

The Convention defines the procedure and conditions for conducting scientific research and it also contains standards intended to assist marine research including provisions for international collaboration.

There are new provisions about collaboration of the states in developing and transferring marine scientific knowledge and marine technology to states who may be in need of technical assistance; namely developing countries. The creation for these purposes of national and regional centers is provided for and also, cooperation between international organizations.

For the prevention of conflicts between states in the field of maritime activities, the Convention's provisions for the settlement of disputes about the interpretation and application of the Convention should be of assistance. A whole system of means for settling such disputes is created. These include,

apart from traditional procedures chosen by both sides in a dispute, the use, upon the demand of one of the sides, of obligatory procedures involving decisions which are binding on all participating in a dispute. Among such means are the International Tribunal on the Law of the Sea in Hamburg (FRG), the UN International Court of Law in the Hague, arbitration of all categories of disputes, and special arbitration for specific categories of disputes.

The USSR in signing the Convention made the declaration, called for by the Convention, about the choice of specific means for settling disputes; namely, that the principle means is arbitration, and on questions of fishing, pollution, scientific research, and shipping - special arbitration. The jurisdiction of the International Tribunal on the Law of the Sea was recognized only for questions of the immediate release of ships impounded by coastal states for violation of their policy in an economic zone.

Such are the important parts of the new international law of the sea as codified by the Third UN Conference on the Law of the Sea.

It is expected that the Convention will go into effect in 1984, 12 months after the surrender to the UN General Secretary, the trustee for the Convention, of 60 instruments of ratification.

The use of the new Convention by all states will contribute to the creation of a unified procedure, based on a fair accounting of the rights and interests of all states, for the use of the sea spaces and their resources and thereby provide for peace and international collaboration of the states in the world's oceans.

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## PORTS AND TRANSSHIPMENT CENTERS

### PROGRESS OF PORT OPERATIONS IN 1982 SUMMARIZED

Moscow MORSKOY FLOT in Russian No 5, May 83 pp 6-8

[Article by P. Orlov, deputy director of the Use of Fleets and Ports Main Administration and candidate of technical sciences: "Ports: Achievements and Tasks"]

[Text] The work of ports is one of the most important links in the shipping industry. It is here that primary tasks are solved, such as ensuring the transfer of the planned volume of freight, stepping up the processing of means of transport (ships, railcars, motor vehicles), and increasing the carrying capacity of the fleet by developing the technology and productivity of moorages. Of special importance in the work of the ports is coordination of the operations of related forms of transport and other organizations; this is recognized as one of the main reserves in the country's transportation system for meeting the national economy's shipping needs.

Among the ports that achieved an increase in the volume of loading and unloading operations in 1982, compared to the previous year, were Arkhangelsk, Mezen, Vyborg, Kaliningrad, Ventspils, Ilyichevsk, Nikolayev, Kherson, Belgorod-Dnestrovskiy, Yuzhnyy, Zhdanov, Berdyansk, Tuapse, Vladivostok, Anadyr, and Vanino. Some ports, however, had a decline in their volume indicators (Murmansk, Tallinn, Poti, Batumi, Baku, and Nakhodka), even though almost all of them had opportunities to transfer additional freight. There were problems in making enough of the fleet available, and work with associated forms of transport was not organized well enough, especially the work with the railroads. For the sector as a whole, the plan for loading and unloading operations was fulfilled last year by 102.1 percent and the indicator for 1981 was exceeded by 6.5 million tons. The plan quota for transfer of foreign trade freight was fulfilled by 100.7 percent, and the increase over 1981 was 3.4 million tons. The planned volume of export freight was exceeded, as was the plan for import freight.

An important part of the work of the shipping industry and ports is the delivery of imported goods to the national economy. Materials and goods that have been acquired abroad should be transported rapidly to industrial enterprises, construction organizations and other consumers so that the turnover rate of the invested capital will have the greatest effect. Some types of materials and equipment are purchased for a specific purpose for certain

enterprises and construction projects and need to be delivered within a strictly defined time period. According to the Food Program adopted at the May (1982) Plenum of the CPSU Central Committee, agricultural freight should receive priority processing.

Thanks to the high degree of responsibility among the collectives in the shipping industry and ports, the increased extent of modern equipment at shipping complexes, and the experience gained by dock workers and machinery operators in 1982, it was possible to achieve the highest indicators for intensity of freight operations in the transfer of raw sugar, mass grain and fodder products, perishable goods, and other foodstuffs. The delivery of pipes and equipment for the Urengoy-Pomary-Uzhgorod gas pipeline was given special attention. The dock workers successfully worked out the transfer of pipes with polyethylene covering and quickly learned how to secure the pipes carefully in railcars, which was aided by an active exchange of experience between workers from Ilyichevsk, Leningrad, Zhdanov and the Far East. In 1982 there was an increase in the transfer of import goods at ports of 911,000 tons over 1981.

A characteristic feature of the freight transfer process was the extremely uneven burden put on the ports by import freight over the course of the year. Most of the freight was received in May and June, with monthly deliveries exceeding 8 million tons. The least volume was received in September and October (3.5 million tons). The difference between the greatest monthly deliveries and the least monthly deliveries in 1982 was significantly higher than the indicators from previous years (2.5 compared to 1.2 for 1981). This kind of uneven load on the ports requires that concrete measures be developed to even out the negative aspects of this phenomenon. In a number of basins and ports the load over the course of the year is evened out in part by export, coastal, and seasonal (for example, arctic) freight. In addition to this, steamship companies and ports should combine the experience that has been acquired in the work of teams of dock workers and machinery operators, and strengthen direct ties with enterprises and organizations for the exchange of manpower that will be of mutual interest. Under conditions of a sharp decline in the work load in certain directions, operations in other directions must be expanded more practically by concentrating the fleet, railcar, manpower and technical resources of the ports.

In spite of the fact that the plan for the volume of coastal freight transport has been met for the most part, and the required quantity of freight has been sent to regions of the Arctic, Far North and Far East, the steamship companies have not always been provided with the planned volume of freight within the agreed-upon time period. Everyone participating in the transportation process is to blame here, from the dispatchers and intermediate organizations to the railroad workers and motor vehicle operators. It would be wrong here to overlook the miscalculations on the part of the shipping organizations. The Poti-Zhdanov and Poti-Zaporozhye lines worked in a disorganized manner all year; there were disruptions in the shipment of ore from Nikolayev and Kherson to the ports on the Danube; there was unsatisfactory shipment of freight from the ports of Vanino, Nakhodka, and

Posyet to Magadan (the transfer capacities of which do not allow an uneven approach to handling freight); and the ferries between Baku and Krasnovodsk and between Vanino and Kholmsk were not used to full capacity.

Last year throughout the ministry day-long work stoppages of dock workers and machinery operators increased by 27.6 percent; and within shifts there was a 0.3 percent increase. Even more alarming is the situation at the ports of the Northern, Estonian, Lithuanian, Black Sea, Novorossiysk and Caspian steamship companies. There is unsatisfactory utilization of working time in loading and unloading operations in some of the companies that have only a few ports under their authority, which makes it relatively simple to provide assistance and control the state of affairs. Wherever the organization of freight operations and effective utilization of manpower is given the proper attention, losses in work time have been reduced. For example, at the Baltic Steamship Company, the number of day-long work stoppages was reduced to one-sixth of the previous level, and the number of work stoppages within shifts was reduced to one-fifteenth of the previous level. Work stoppages were also reduced at the ports of the Azov, Soviet Danube, Sakhalin and Kamchatka steamship companies.

There were 1028 more ships processed in 1982 than in 1981 in the country's ports. The gross volume was 1162 tons per ship-day, compared to 932 tons in the previous year. The indicators for net volume were 3430 tons and 3137 tons per ship-day, respectively. Nonproductive work stoppages per 1000 tons of processed freight were reduced by 26 percent and accounted for 0.462 ship-days. However, if in the majority of basins the processing volume of the fleet in ports increased and nonproductive costs decreased, in some of the steamship companies the indicators remained at the same level, and some even became worse, for example in the Murmansk and Far East companies. In addition to objective conditions (the freight products list and types of ships used, uneven loads put on ports over the course of the year, and so on), our own miscalculations and losses have also had an effect. The V/O "Sovfrakht" does not increase the reliability of charts showing the delivery of freight-carrying ships to ports. Inaccurate predictions are made of the import situation when ships are loaded with loose grain freight. Mistakes are made even after charts showing the positions of ships at sea have been corrected. Shipping lines and ports waste time in making decisions concerning ships that have arrived, fumigations, commission and expert inspections of the freight, and obtaining contracts (this is how things stand in Klaypeda, Izmail, Novorossiysk, Zhdanov and Kerchi). There are also cases of delays in the redistribution of ships between ports and significant losses of time before a ship enters the NPGRP [expansion unknown] (in the Azov, Georgian, Soviet Danube and Far East steamship companies). There is still unregulated shipping on the Danube. "Regular" travel of ships from the Far East and Sakhalin shipping lines to Magadan (100 percent of the shipping is covered by a schedule) is really nothing of the sort: even under the condition of constant substitutions, fewer than 25 percent of the ships leave Magadan according to the schedule; the rest stand idle as they are processed and wait in the roads.

Joint planning and coordination of operations among associated organizations in transportation centers is continuing to improve and expand. In Leningrad,



Riga, Odessa, Zhdanov, Batumi and Vladivostok, the coordination of operations of workers in associated organizations is going beyond the bounds of the local transportation centers based on maritime ports and is encompassing transportation and economic regions. The leading steamship companies in regional transportation centers should be more persistent in putting issues before workers in associated organizations, such as stabilization of transport systems, strengthening of direct ties with industry, unification of automated management systems (information programs, primarily), and development of a material and technical base for ports, stations and elevators on a foundation of unified technological processes.

Another pressing problem in transportation centers is the ability of the railroads to fulfill the plans for supplying cars for import freight. Even though the volume of import freight that was left in ports at the end of the year decreased to six-tenths of the 1981 level, the total volume accounted for several million tons. The railroad fell short in providing the planned number of railcars (by 13.5 percent), and 2 percent of the cars delivered on time were not put into use by the ports. The ports' requests for railcars exceeded the yearly plan by 430,000 cars. In spite of the improved indicators for utilization of railcars that were delivered, one cannot settle back and be content with what has been achieved.

The primary result of the joint work between maritime and railroad workers is the shipment of freight to the national economy. Steamship companies and ports should strengthen commercial contacts with railroad administrations, departments, and stations; improve mechanisms for practical planning and control; and mobilize their collectives to fulfill shipment plans, primarily by making use of local resources.

River transport last year shipped 1,649,100 tons of import freight, which included 1,294,000 tons of foodstuffs. The largest volume of import freight was transferred by the Leningrad port to ships of the Ministry of the River Fleet. At the grain-receiving stations and ports on the Volga, 491,300 tons of grain and other freight were delivered from Berdyansk and Zhdanov, which is almost a five-fold increase over the previous year. The Main Administration of the River Fleet of the UkSSR continued the shipment of grain and foodstuffs from the Kherson seaport to centers and ports on the Dnepr, that it began in 1981. Experimental shipments of canned goods on lighters from ports on the Danube to the Dnepr were made, with delivery of goods along the river all the way up to Kiev. Plant-consumers received 143,800 tons of metal products from Izmail.

Ports transferred 451,900 tons of freight to motor vehicle transport. The Black Sea Steamship Company formed a section at the Ilyichevsk Motor Vehicle Depot for intercity container shipment, which made it possible to ship a good deal of freight to remote consumers. This experience deserves to be studied carefully and spread with the help of republic ministries of motor vehicle transport. Unfortunately, far from all of the shipping lines and ports adequately recognized the advantages of shipping small-sized freight and containers by motor vehicle transport. As in the past, the foreign trade associations of the Ministry of Foreign Trade, which are not providing the ports with contracts for motor vehicle transport of import freight, are standing on the sidelines as well.

We should mention that thanks to the expanded use of river vessels and motor vehicles, around 40,000 railcars have been freed up at the transportation centers.

As an organizational form of cooperation among associated transportation, foreign trade, procurement, and other organizations, transportation centers have acquired a wealth of experience in joint planning and working out inter-departmental decisions. Coordination is being expanded to encompass large economic regions and to include development of transportation and technological systems and direct ties with industry. Plans for reconstruction and social development are also being coordinated. One of the fundamental achievements is the atmosphere of mutual aid and trust in the associated labor collectives and among the operations management personnel and directors of all the units. Conditions are now ripe for consolidating what has been achieved in normative legislative acts, which should reflect organizational forms of coordination at all levels, multiple planning indicators, and mutual responsibility among associated workers. This massive and complex work should be carried out in 1983.

The draft of a new Statute on the organization of processing and servicing of the dry freight fleet in seaports is being completed. As a rule, the initial period when a new document goes into effect is characterized by errors being made in the course of its practical application. For an organized and rapid transition to operating according to the new Statute, the State Planning and Design and Scientific Research Institute for Sea Transportation under the USSR Ministry of the Maritime Fleet, the steamship companies, and every port must plan in advance informational and instructional measures which should involve as broad a circle as possible of people connected with the primary activity of the sector.

The task of the ports is to transfer the established volume of national economic freight. Special attention should be given to prompt shipment of arctic freight and to concentrating this freight at certain base ports. Deadlines for presentation of marine tonnage must not be violated. One of the most important jobs of dock workers in the current year is preparing the ports of the Far East basin and the Arctic for introduction of a lightering system.

Ports in all the basins will participate in fulfilling the Food Program, by transferring grain, mixed feed mixtures, raw sugar, perishable goods and other foodstuffs. Dock workers at the Leningrad, Ilyichevsk, Zhdanov, Vladivostok, Nakhodka, and other ports will do most of the work in shipping pipes and equipment for construction of the Urengoy-Pomary-Uzhgorod gas pipeline.

Ports have begun getting modern equipment for transferring grain. Leningrad, Odessa, Novorossiysk and Nakhodka are being equipped with highly productive transfer equipment. This equipment will substantially supplement the moisture-resistant equipment of the transfer complexes. Success depends on its effective utilization, and this task lies first and foremost with the dock workers.



A set of preliminary measures, the accumulated experience and high sense of responsibility among dock workers and machinery operators and other participants in the transfer process at the ports should guarantee successful fulfillment of the tasks before port workers in transferring the planned volume of freight in 1983.

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## PORTS AND TRANSSHIPMENT CENTERS

### ORGANIZATIONAL DEFECTS AT BELGOROD-DNESTROVSKIY PORT

Moscow VODNYY TRANSPORT in Russian 19 Apr 83 p 2

[Article by Ye. Smelyanskiy, head technologist of the Belgorod-Dnestrovskiy seaport, and Ye. Ostanenko, chief of division for organization of labor and wages: "Reduced Numbers, Better Results"]

[Text] As was already reported in the newspaper on 24 March in the article entitled "Both Form and Content" the Nikolayev maritime trading port has changed over to a principally new structure for administration of production--they have eliminated cargo rayons. Specialized transshipment complexes here have now been included directly in the divisions for the administration of the port, bypassing such an intermediate stage as the cargo rayon.

As one can see from the editorial mail, other ports of the branch have thought about the problem of reducing the number of administrative units. Today the newspaper is publishing material from the Belgorod-Dnestrovskiy port which does not have technologists in the cargo rayons but has a section for technological fittings which directly conducts and controls the technological work of the entire port.

Today the solution to problems set for maritime transportation can proceed only with the utilization of all existing resources. And the most rapid and efficient application of them depends on the level of management and control of these resources.

According to the provisions concerning the structure of technological subdivisions in ports of the Ministry of the Maritime Fleet, today there are two levels of administration. The first is the division of technology (or group) which exercises supervision over technological discipline, directs and improves the technology of loading and unloading work, develops technological documentation and so forth.

The second level is made up of those who work directly in the cargo rayon (senior technologists and engineer-technologists). They exercise control over technological discipline and the issuance, manufacture and rejection of cargo lifting implements and adapters.

For large ports with a large number of rayons this structure is still optimal and works successfully. But for ports of the first and second categories, this structure has a number of essential shortcomings.

In the first place, this duplicates the technological work of the rayon and division of technology: the time of "administrative trips" increases. In the second place, the dual jurisdiction of the technologists of the rayon--the division of technology and the cargo rayon--in our opinion, essentially complicates the technological service. This takes place because the tasks of the chief of the rayon and the division of technology do not always coincide. The chiefs of rayons are primarily interested in the most rapid processing of ships and cars, frequently to the detriment of technological discipline. Hence there are violations of the placement of people and mechanisms.

Therefore it is very difficult for technologists of the rayon to insist on strict observance of technological discipline, and this leads to violations of technological and commercial discipline.

In 1981 as an experiment our port created a section for technological fittings, that is, for the first time a nonshop structure was applied. It included the technological rayon and the division of technology of the port, and an experimental section, welders for manufacturing and repairing riggings and warehousemen in charge of the rigging warehouse. It is headed by the head technologist of the port--the chief of the section of technological fittings.

Thus this section does all of the port's technological work, exercises control, issues riggings, and does experimental work on manufacturing cargo moving equipment, that is, all the port's technological work is concentrated in one place--in the section for technological fittings. There are no engineer-technologists or rigging warehouses in the cargo rayon.

After two years of operation according to this system it was clear that with a reduction of the staff by 2 people (engineer-technologist and welder for manufacturing riggings) there was a considerable improvement in the results of the work. A system was introduced whereby riggings were prepared when they were shipped in containers to the cargo rayon. The time of preparation decreased by 20-25 minutes. As a result of increased control over the utilization and maintenance of riggings and strict accounting for them, direct expenditures on material for manufacturing cargo moving equipment decreased by 5,000 rubles a year. Now when the brigade is to blame for the loss or breakage of cargo moving devices the collective is deprived of 25 percent of its bonus per shift. The cargo rayon is relieved of the need to prepare and utilize cargo moving equipment, technological discipline has improved, the level of organizational work and efficiency in all units of the technological service has risen, and the efficiency of the work has increased.

It would seem that today there is a need to create technological, commercial and technical complexes for providing the loading rayon with technical equipment, fittings and commercial work. Today the chiefs of the rayons must engage only

in stevedore operations--loading ships and cars--and the remaining work (that is, the process of preparing for and serving production) must be done by complexes headed by chiefs of divisions--commercial, technological, and mechanization.

Of course, what has been said is not the final truth; it is only steps toward change of the administration of production, the first shoots. There is much that is disputable and unusual here. But the decisions of the 26th CPSU Congress direct us toward the recognition that one cannot adapt a live, developing organism for the administration of the economy to outdated, customary forms. On the contrary, the forms should be brought into line with the changing economic tasks. This is the only way to state the issue.

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## PORTS AND TRANSSHIPMENT CENTERS

### SUCSESSES OF ODESSA PORT WORKER COOPERATION

Moscow GUDOK in Russian 31 Mar 83 p 3

[Article by M. Gorbis (Odessa): "Full Load, Rapid Trip for Cars"]

[Text] Railroad workers, dock workers and truck drivers of the Odessa Transportation Center sent an open letter to all transportation workers of the republic through the newspaper PRAVDA UKRAINY.

"Odessa is the largest transportation center in the country," it says in the letter. "It includes 10 railroad stations, 3 seaports, an international ferry, industrial rail transportation enterprises, automotive enterprises and a petroleum pipeline. These vitally important economic arterials continue to develop effectively. During the past 5 years alone the volume of loading work in the center doubled."

But, as the authors note, there are frequently various kinds of interruptions at the junctions of various kinds of transportation. The cargo is not always shipped promptly from the railroad stations, and clear information about their approach is not always provided. It sometimes happens that hundreds of cargo cars stand idle for days waiting for ships. On the other hand, there is not always enough rolling stock to move the products that come into the port.

Transportation workers of the Odessa center consider it their responsibility to give concrete assistance primarily to the railroad workers so that the steel mainlines will join all units of the country's economy into one. In the third year of the five-year plan related workers are working under the motto: "A Full Load And A Rapid Trip For The Railroad Cars!" In the center a good deal of attention is being devoted to improving rolling stock. For 3 years now the leading comprehensive brigades of dock workers of N. Tymun, P. Timoshchuk, V. Zimoglyad and A. Gutsol have been repairing the cars that have been sent for loading.

As of today the railroad workers of the Odessa Transportation Center have concluded agreements for the repair of cars with more than 30 enterprises.

A good deal is also being done to make the shipments more efficient. For example, all of the small-batch cargos are sent from Odessa to populated points of the republic by truck. This has accelerated the delivery of cargo and has released about 10,000 car and 65,000 railroad containers during the first 2 years of the current five-year plan.

In the modern stage one cannot solve the problem of further developing transportation without accelerating scientific and technical progress. Special working groups are now engaged in this. The ChernomorNIIproyekt institute, for example, suggested a variant for the development of the material and technical base of the various kinds of transportation in the oblast. Specialists of the steamship lines are investigating the question of the junctions of the means for loading.

Recently the collectives of the enterprises of the center had a workers' meeting where they discussed in detail the strengthening of labor and technological discipline and further instillment of a feeling of responsibility for the matters entrusted to them.

In a word, the Odessa workers have many reserves and they are putting them into action--it is a matter of honor for the transportation workers. They have called representatives of the workers' guard to engage in this.

The valuable undertaking of the railroad workers, truck drivers and dock workers of the Odessa Transportation Center was approved by the bureau of the obkom of the Communist Party of the Ukraine.

How are the initiators keeping their word? The dock workers have covered the plan for the first two months of the year for the handling of ships and cars. Because of the better organization of labor, they have unloaded and loaded about 30,000 cars, having reduced the idle time of each of them by 19 minutes as compared to the norm. Things are going well in March too. During the three working weeks of this month the port workers have processed an additional 175,000 tons of cargo.

The collective of the Odessa port station is working at a good rate. Since the year 28,800 tons of national economic products have been sent from here in excess of the plan. The idle time of rolling stock during one loading operation has been reduced by 2.4 hours as compared to the norm. Because of the joint efforts of dock workers and railroad workers, the static load has increased by 2.4 tons in excess of the assignment. In the Odessa division as a whole it has increased by 450 kilograms. The turnover of cars has been accelerated by 5.4 hours.

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## PORTS AND TRANSSHIPMENT CENTERS

### VLADIVOSTOK PORT, DOCK, RAIL WORKERS FACE PERSISTENT PROBLEMS

Moscow EKONOMICHESKAYA GAZETA in Russian No 17, Apr 83 p 4

[Article: "Vladivostok Center Can Operate Better"]

[Text] The Vladivostok Transportation Center includes enterprises of the railroad, the port, the Far Eastern Transportation Administration, the local office of Soyuzvneshtans. The staff of the center is the coordinating council which is headed by the chief of the port, N. Tsakh. The efforts of cooperating collectives toward the common goal are directed by the council of secretaries of party organizations of the enterprises of the center. Unified comprehensive shifts originated during the course of competition.

The operations work in the center is now planned for 10 days in advance, with subsequent refinement for 4 days and for 1 day. On this basis they draw up continuous schedule-plans which contribute to strengthening technological and executive discipline. Similar organizational and technical measures borrowed from Leningrad transportation workers have made it possible to considerably improve the loading of means of transportation, to expand the handling capacity in the center itself and in the approaches to it, and to accelerate the processing of rolling stock.

In recent years workers of the Far Eastern mainline have equipped automatic block sections from the Arkhara station to Vladivostok and provided them with electric centralization of switches and signals. And powerful electric locomotives with alternating current of the VL80t and VL80s series have appeared on the Khabarovsk-Arkhara cargo section. As a result, the movement of trains taking cargo to Pacific Ocean ports has accelerated greatly.

Participating in comprehensive socialist competition, just in the last year, as a result of better utilization of means of transportation, the cooperating workers have saved more than 5,500 cars and processed more than 200,000 tons of cargo in excess of the assignment.

The cars have begun to stand idle less during loading operations. The average amount of idle time in the port has decreased by two-thirds, and the number of ships that stand idle during cargo operations in excess of the norms has increased by as much. The volume of container shipments of automotive transportation has increased 3-fold.

Business cooperation among the workers made it possible to save about a billion rubles last year. And this is just within one large transportation center. In Maritime Kray as a whole the work according to continuous schedule plans made it possible to transport 637,000 tons of national economic cargo in addition to the plan.

They have begun to use more large-tonnage containers of the international standard in shipments. Not so long ago a million containers of this type traveled the Transsiberian mainline. Here it is appropriate to recall that in 1971, when these effective kinds of shipments first began to be assimilated, only 2,300 containers were transported.

The railroad workers are continuing to improve the progressive system of delivering large-tonnage containers along the train routes. Thus they accelerate the delivery of cargos to the points of destination and avoid additional maneuvering work at sorting stations. The dispatcher service of the Far Eastern mainline is giving the "green light" to container routes, processing them with a speed of 1,200-1,300 kilometers a day, that is, with the speed of passenger trains.

The experience of the Far Eastern railroad workers was demonstrated at the Exhibition of the Achievements of the USSR National Economy in Moscow and received a high rating, and the Vladivostok division was awarded a Diploma of the First Degree and a Gold Medal.

But workers of related kinds of transportation in the Vladivostok center has still not achieved smooth enough operation. Sometimes the coordinated actions are undermined by mutual complaints, and there are interruptions at the junctions.

For example, the port workers frequently justifiably accuse the railroad workers of sending cars that are in disrepair to the Vladivostok and Nakhodka ports. They have to return them for repair and washing. They do not always provide for rhythmic loading and unloading of the cars. The work during night hours and on days off is organized poorly. Specialized platforms that are intended for shipping large-tonnage containers are sometimes used for other purposes.

So far the experience of the Moscow workers in repairing cars and containers has not been extended to industrial enterprises of the kray. Each year approximately 3,000 cars are damaged in Maritime Kray. If they were promptly repaired and maintained in good condition it would be possible to ship an additional 150,000 tons of cargo.

All such shortcomings can be completely eliminated through the joint efforts of the partners. They are competing so that during this year they will be able to release 11,000 cars for additional loading, deliver 150,000 tons of cargo on the railroad in excess of the plan, and reduce the idle time of trucks by 2 percent. And the crews of the ships of the Far Eastern and Maritime steamship lines, in turn, are striving to ship 75,000 tons of cargo in excess of the assignment.

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## PORTS AND TRANSSHIPMENT CENTERS

### STATE OF RYBINSK PORT GRAIN-LOADING FACILITIES DEPLORED

Moscow VODNYI TRANSPORT in Russian 7 May 83 p 2

[Article by V. Khlystov: "Paradoxes of Modernization"]

[Text] The city of Rybinsk is located at a lively river inter-section. Arriving here is grain the hauling of which is organized by the following four steamship lines: the Volga Consolidated, Kama, Beloye, and the Volga-Don. It is received at their own moorings by the following Rybinsk enterprises, which are subordinate to the Yaroslav Oblast Grain-Products Administration: Milling Plant No. 2, Mixed-Feed Plant and Grain Center No 60. To be more precise, they used to receive it, for they no longer all, or in sufficient measure, take part in this business, which has become substantially more complicated in recent times.

From year to year their moorings have been functioning worse and worse. It has reached the stage where during the year 1982 not a single ship was unloaded on time at the grain-products combine. Idle times in excess of the norm ranged from a few hours to more than four days. Ships also stood idle for tens of hours at the mixed-feed plant.

The general basic reasons for such an unhappy situation are as follows. During the last 20--30 years the loading, unloading, and conveying equipment at these enterprises has not undergone any modernization or renovation. Things are tight with spare parts. Matters are still worse, it may be said, with the labor resources. None of the moorings have permanent workers for the cargo-handling operations. Thus, the mixed-feed plant just for work on the package line needs 27 men for three shifts, whereas the plant has a total of only 13 stevedores. It processes the fleet only during the daytime hours, while on holidays and other days off it shuts down completely. The official roster here "does not assign" a single stevedore, mechanic, or weigher to the mooring.

Neither the organization nor the wages on these moorings motivate people to speed up the processing of the fleet.

In conversations with the director of the grain-products combine, A. T. Sharundin, the acting director of the mixed-feed plant, A. V. Shustrov, and the deputy chief engineer, L. S. Kostina, as well as with the workers at the Rybinsk port, still more irregularities were brought to light. Some of these are such

that their elimination would improve, for the most part, the statistical indicators for the activity of one of the sides--the river workers or the procurement agents, but would have little effect on the vital matter at hand--on the speed of receiving grain as well as its quantity. Therefore, we will not dwell on these operating problems; they have, most likely, long been known to the appropriate organs in the RSFSR Ministry of Procurement and its Yaroslav Administration.

However, it is necessary to emphasize those circumstances which trouble the river workers most of all. The decrees of the party and the government concerning the development of river transport, as adopted in 1979, provided for the modernization in Rybinsk of the mooring of Milling Plant No 2 for receiving large-capacity diesel ships loaded with grain and for the construction of a new stationary mooring for Grain Center No 60. The center began building the mooring in 1981, and during this and the ensuing years it has assimilated slightly more than half of the planned capital investments; the work has been slowed down by the lack of a contractor. At present construction is "on hold"--it is impossible to obtain the loading and unloading machinery which is specified in the design.

Milling Plant No 2 has been basically successful in coping with its assigned tasks; by the present shipping season it had prepared its own mooring earlier than the others. But it cannot receive ships with a cargo-capacity of more than 2,000 tons. The modernization of this mooring is supposed to be completed in 1985, but the plans for it are still not ready.

In essence, the grain-products combine has swelled up more than all the others, handling 5,000-ton-cargo ships. But, you know, even this mooring was not designed for such large ships. The technology for unloading the holds is clumsy, the machinery over many years has become extremely worn out, but there is nothing to replace it with. The foundation of this mooring, made of metal piles, is bending 60 centimeters per year out of line with the mooring. The port receiver-dispatchers complain about the extreme dustiness of the air near the scales, and it is also difficult for them to work in the unlit conveyor gallery.

The mixed-feed plant generally avoids receiving grain via water. The expansion [of the mooring] within the city limits is prohibited. This mooring has existed for more than 20 years, and during this time no funds at all have been allocated by the plant for its repair; only last year a tiny amount was authorized to drag aside a supporting pier ["bychok"] that had fallen into the water. And a second such pier, as was stated in a document, "is also in a state of extreme imbalance"....

But, you know, there was a time when the mixed-feed plant used to receive 25,000 tons of grain per year by water transport. And excursions used to be conducted to the Rybinsk Grain Products Combine in order to demonstrate a progressive organization of labor.

To this day I feel a certain complexity when I recall the reply which Comrade Shustrov made regarding the subject of the accident-prone condition of the mooring: "But why should they bother to tie up to the mooring? Let them sail in close, stand at anchor, and then unload." Wouldn't it be interesting to hear what the ships' pilots would have to say about this?

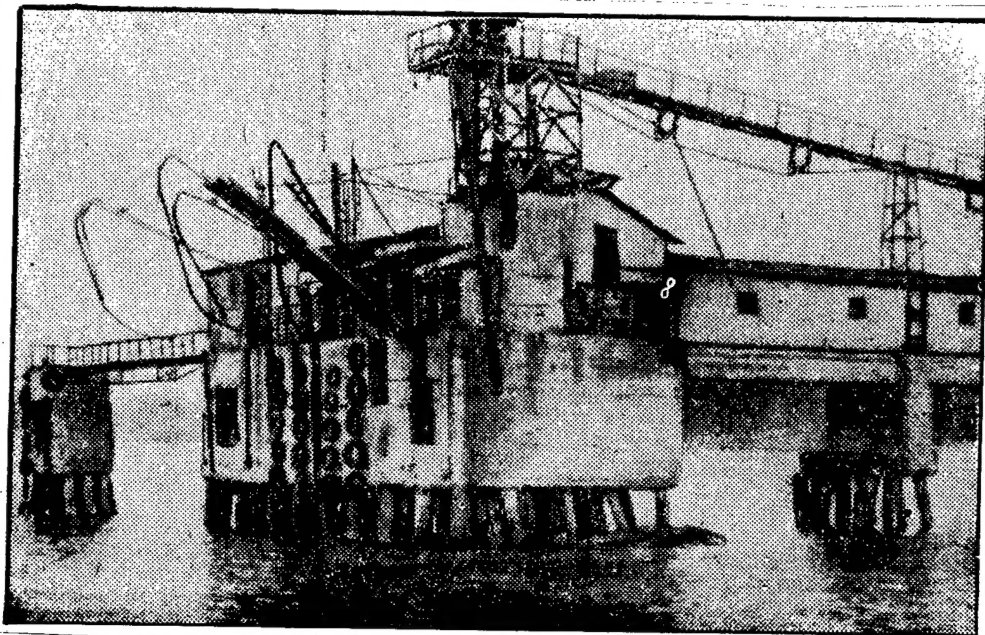


PHOTO CAPTION

This is what the "mooring" of the Rybinsk Mixed-Feed Plant looks like.

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END